

THE WESTINGHOUSE Automatic Engine

It is doubtful if any steam engine ever worked its way into popular favor so quickly as has the Westinghouse Automatic Engine, of which we present illustrations and brief description, taken largely from the builders' catalogue. In designing this engine the special objective points have been to render it, by its extreme simplicity, and the peculiarities of its design as to adjustments, keying up, packing, oiling, etc., independent of the careless attendance of an unskilled engineer; to reduce the requirements of repairs to a minimum by making good performance independent of wear; to make the repairs, when required, at the lowest possible expense of time and money, by renewing removable and inexpensive wearing parts only, by duplication from the works to gauge, thus maintaining the engine, in all essential respects, new, even after long use; to secure high speed, which modern practice and experience has shown to be desirable in a degree for all purposes of power, and absolutely essential in many cases; to retain a proper grade of fuel economy; to place a strictly first-class automatic engine on the market at a moderate price, by systematic manufacture on a large scale without reference to orders, something which has never been attempted except with small engines.

The usual and daily duties of the engineer in charge of the common horizontal or vertical double-acting engine are: to start and stop; to fill the cylinder lubricator; to keep the oil cups full, and oil all the running bearings frequently; to keep the pedestal and various "brasses" delicately keyed up between the alternatives of heating and pounding; to pack joints and stuffing boxes; frequent adjustment of the valve motion to secure an equal valve travel; occasional lining up all over; making minor repairs; wiping; and the indiscriminate use of the monkey wrench on general principles. As against these, this engine has no oil cups; the running bearings lubricate themselves continuously; there are no "brasses" about the engine that can be keyed up, or a necessity for it if there were; there is not a packed joint or a stuffing box in it; the valve adjustments are made final and permanent before the engine leaves the shop; the engine is self-contained and independent of alignment; short of absolute breakage there are no minor repairs; the parts being enclosed and the main bearings being protected from drip, there is little or nothing to wipe; and, since every nut is set up solid and kept so, there is no room for carelessness with the wrench. It is a distinctive feature of this design that the wearing parts are removable and not adjustable. The value of this fact in locations where skilled help is unavailable, is apparent.

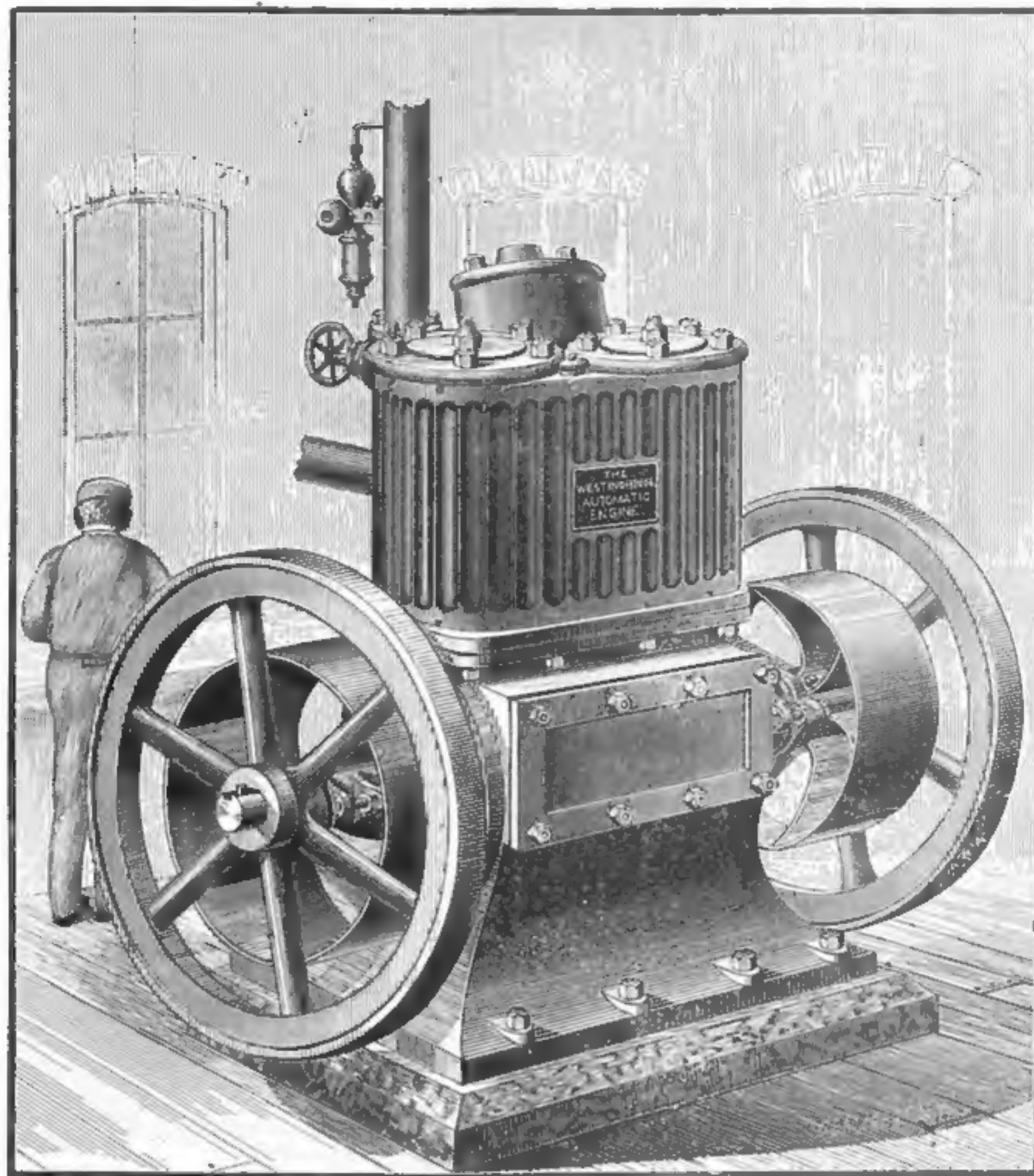
Large steam ports, very direct, and having an area of over 12 per cent. of the area of the piston, together with large exhaust openings to avoid back pressure, form a feature of this engine. To attain and maintain high speed it is a necessary condition that all reciprocating parts should be perfectly balanced, and this is secured in this engine in a very simple manner. The re-

ciprocating parts of each cylinder are exact duplicates of each other as to weight and extent of motion. The two cranks being opposite each other, instead of quartering, all the masses of each side are at all times moving in exactly opposite directions and with equal velocities, hence each precisely

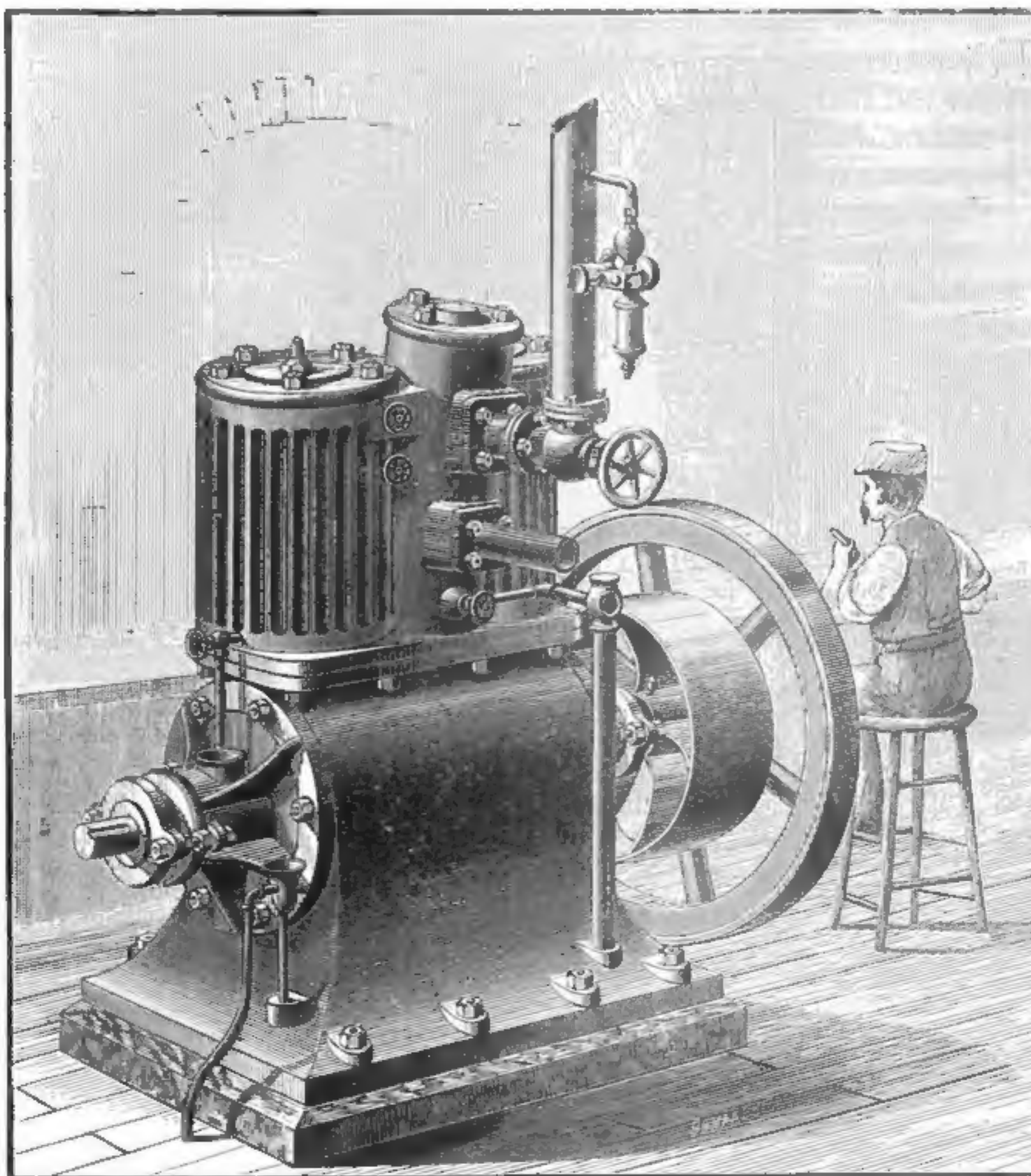
same plane, leaves a slight unbalanced effect in a direction parallel to the shaft only, which is adequately provided for in the length of base. The balancing of the rotating parts is in part involved in balancing the reciprocating parts, but is further perfected by what are termed "balanced bobs" on the

pistons are lubricated in the usual way by an oil pump or automatic lubricator discharging into the steam pipe. All the other running bearings are contained within the enclosed chamber of the crank case. The case is filled to near the bottom of the shaft with water, on which is floated a certain quantity of oil. Into this the cranks and eccentric dip at every revolution, and when running to speed the entire chamber of the crank case and cylinders is filled with a foam of oil and water, which is bound to reach every part. Ample lubrication is provided for the main bearings by the oil which finds its way out past them, further insured by using the oil cups on these bearings as the point of introduction of all the oil for the engine. Any excess is caught by centrifugal wipers and returned into the crank case. It follows, therefore, that a careless engineer cannot overlook some one point, and so endanger the whole engine. The reservoir once filled and the cocks opened, the entire lubrication is provided for some days. An overflow pipe with funnel head is attached to the crank case, whereby the level of the oil within may be seen. Usually the increase of water by condensation about supplies the waste. There is no slop of oil on the outside of the engine or upon the floor; no indiscriminate use of the "squirr-can;" no greasy "waste," and since the oil is used over and over, no more is needed than what is given to the main bearings.

It is proper now to give some description of this engine, and reference to our illustrations will render easy of comprehension the following: The cylinders are cast in one piece with the valve chamber, and are bolted to the top of the bed or crank case. The cylinder heads cover the upper ends of the cylinders only, the lower ends being uncovered and opening directly into the chamber of the crank case. The pistons are of the "trunk" type, double walled at the top to prevent condensation, open at the bottom, and carrying hardened steel wrist-pins. They are packed with four rings. The connecting rods are hollow, with ribs, and are subject to compression only; the cranks, the crank pin, and the crank shaft are all of steel, and may be removed by taking off the crank-case head. The steel of which the cranks are made is cast under pressure and is a true steel; its quality is shown by the fact that it may be drawn out and tempered for a lathe tool. The crank shaft bearings are in the form of removable shells, lined with babbitt metal which is expanded into place under a hydraulic pressure of 15 tons per square inch of surface. A chamber is formed in the flange of the shell *d*, enclosed by the cover *d'*. In this chamber, and revolving with the shaft, is the wiper, which takes up the oil as it works past the bearings and returns it into the crank case. This renders all other lubrication unnecessary and keeps the engine clean. A syphon overflow, with a funnel head, prevents any accumulation of water from rising above the level of the pipe *e*, and at the same time prevents the escape of oil. This overflow may be piped off at the hole *e*, in the funnel head, as convenient. Collar washers of bronze form the end bearings of the cranks. Lead washers prevent the taper sleeves from being taken up so as to cause binding. A center bearing bridges the crank case, and receives the thrust of the pistons. The



FRONT VIEW OF 160 H. P. ENGINE.



REAR VIEW OF 160 H. P. ENGINE. (One Fly-Wheel Removed.)

counteracts the effect of the other, whatever the speed. The balance is attained without complexity or multiplication of parts, and involves no stuffing-boxes, inaccessible pistons, etc. The fact that the two pistons work side by side, and not in the

cranks. The engine being "high speed," lubrication with never-failing certainty is an obvious necessity. The means for this purpose are novel and effective, and constitute, perhaps, one of the most practically valuable features of the engine. The valves and

bonnet *h* may be removed to give access to the cranks. The valve is of the piston variety, of improved construction, being built up from a neck, and spider heads of malleable iron, and the rings *k* *k*, the whole bound together by the hollow valve bolt *l*. The valve guide *f*, serves also in lieu of a stuffing box against the exhaust steam contained in the passage above it. The valve guide, as well as the valve, and both pistons are packed with simple sprung rings of cast iron. The valve stem is keyed fast to the guide, and grips the valve without binding between the nut at the upper end and the collar at the lower end, as shown. Water is supplied to the crank case through the pipe *R* *R*, and the level is indicated in the funnel head of the overflow pipe. *M* and *N* are respectively the steam and exhaust connections. The standard band wheel is a combination pulley *Z*, and fly-wheel *Y*, cast together, so that the pulley overhangs the main bearing, throwing the line of belt strain well toward the center of the bearing, and taking the spring off from the shaft. The automatic governor is located on the shaft between the cranks, and actuates the valve direct without rock shafts or other mechanism.

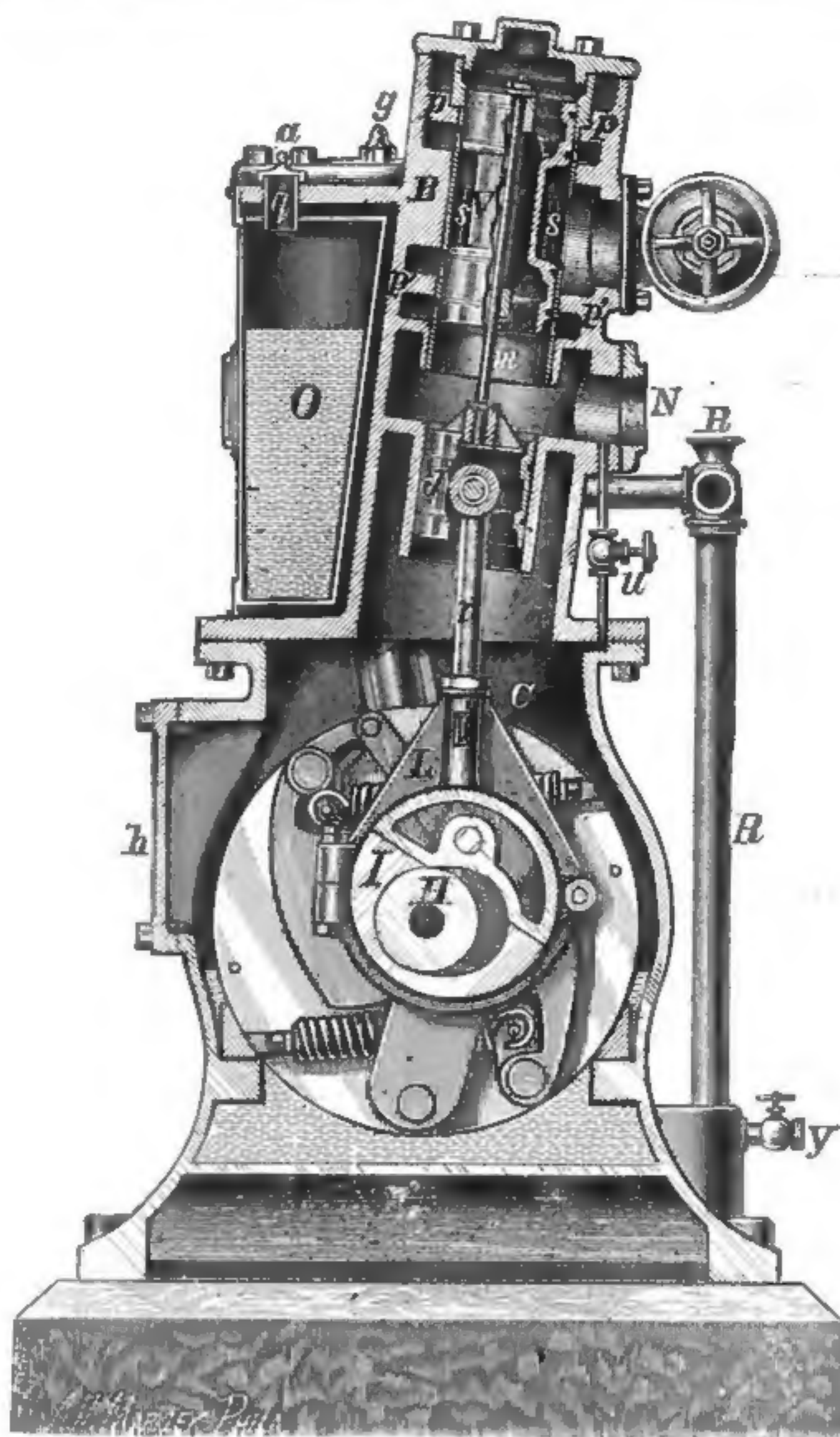
Thirteen regular sizes, varying from four to two hundred horse power, are made, besides five special sizes. In addition to our illustrations of the engine proper, we also present two small engravings indicating two methods of applying it to labor, and would refer the interested reader, for any further desired information, to the Westinghouse Machine Company, Pittsburgh, Pa., or any of its branches, the location of which may be ascertained by consulting their advertisement on another page, or to Messrs. Fairbanks, Morse & Co., of Chicago, Ill., who have contracted with them to control the entire sale of the Westinghouse Automatic Engine in the western states and the territories for a term of years. This contract, which is exclusive, took effect July 1st, and being closed only after a thorough investigation as to relative merit, becomes a very practical endorsement of the engine in question.

HOW TO DETERMINE THE AD-MIXTURE OF ORGANIC OR IN-ORGANIC SUBSTANCES IN RYE AND WHEAT FLOUR.

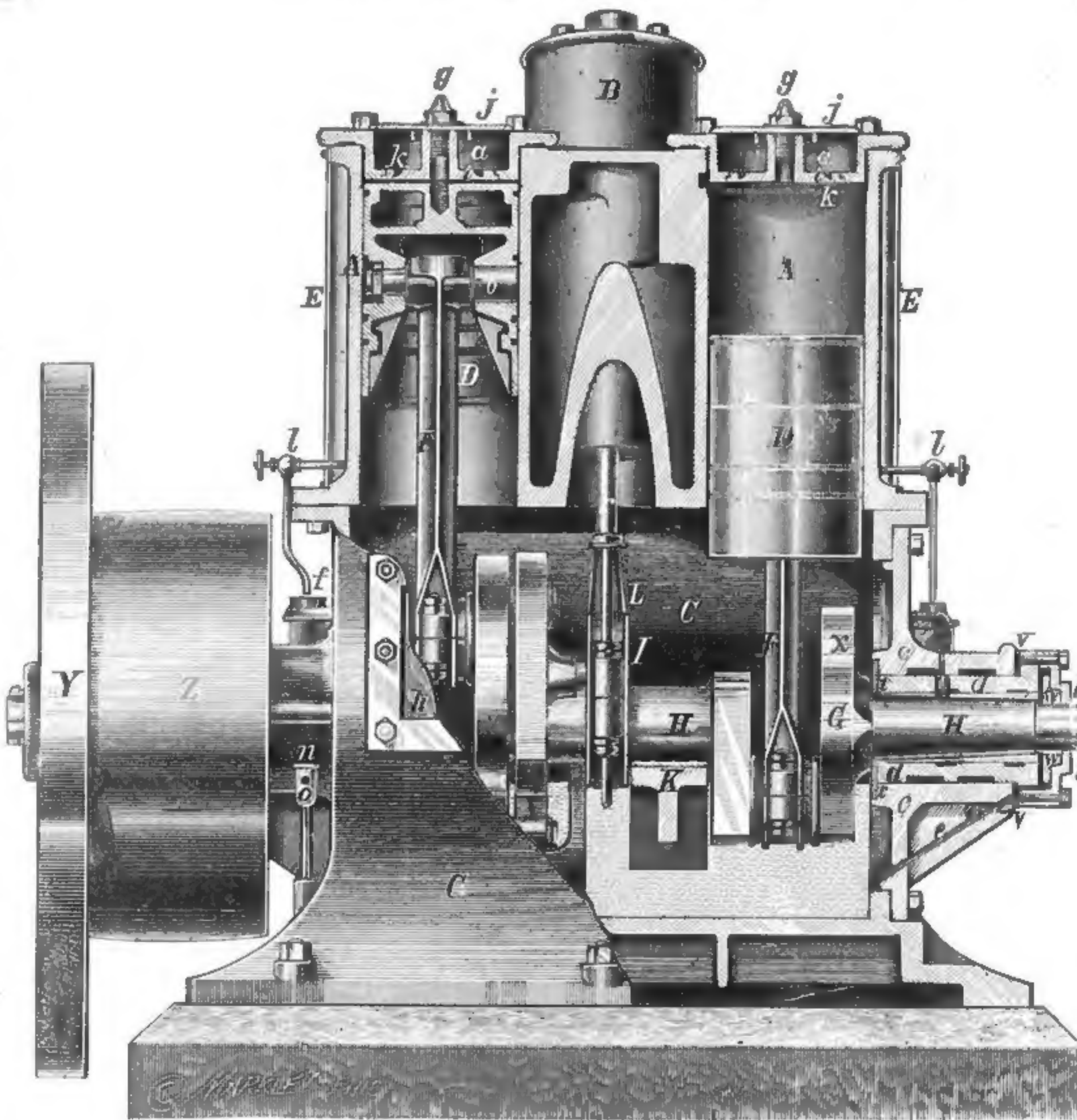
(Prize essay of the German Millers' Association by Dr. L. Wittmack, Professor of the Agricultural College at Berlin.)

Translated by THE MILLING WORLD
IV.

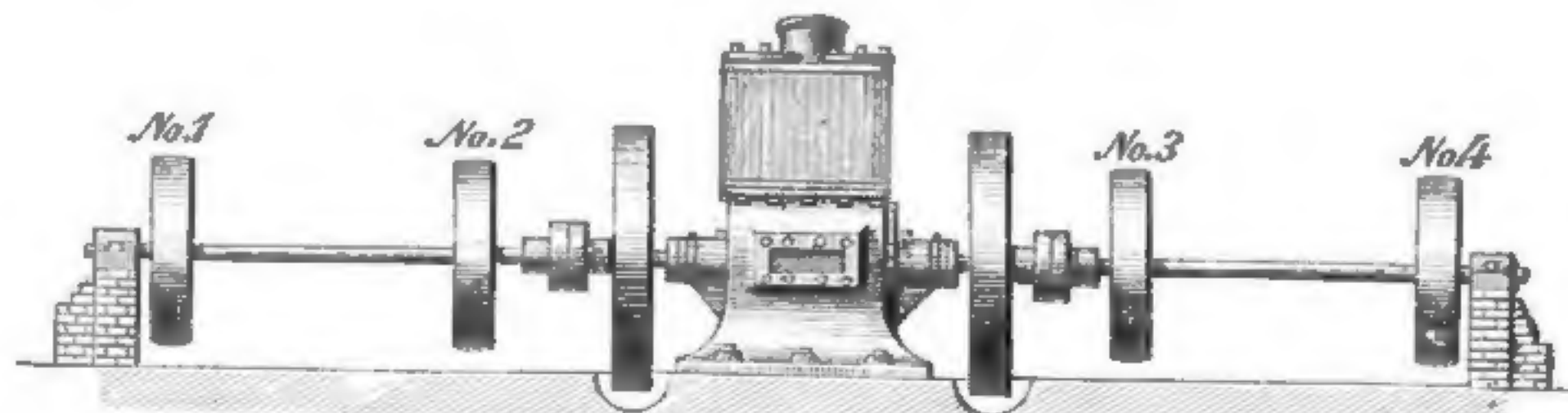
Although it has been stated that no microscope is necessary for the detection of mineral adulterations of flour, it is a useful instrument in this connection, nevertheless. Viewed under a microscope, starch grains are transparent, mineral substances are opaque. Gypsum shows fine crystals; heavy spars form irregular, roundish lumps, but the differences as demonstrated under the instrument are small, and the only substance which can be identified correctly is gypsum. Above all we must notice in our microscopical investigations that an addition of iodine imparts no color to the mineral substance, a blue color to the starch, yellow to the gluten, and, sometimes, a yellowish tint to the bran particles. In England, where grain often sprouts on account of wet weather, with a consequent deterioration of the gluten, we are told that the bakers add alum to the flour, in order to make the gluten more insoluble. This can be detected in the flour as well as in the bread by an addition of an extract made of cochille and acetic acid. One drop of this extract added to pure flour or bread, produces an orange color; if mixed with alum we obtain a beautiful carmine red, more or less intense, according to the quantity of alum added. Another test that is recommended for this purpose, applies an



CROSS SECTION THROUGH VALVE.



CROSS SECTION THROUGH SHAFT.



MAIN SHAFT COUPLED TO ENGINE.



APPLICATION OF TWO ENGINES TO MAIN SHAFT.

extract of Kampeche in a similar manner. One part of kampeche wood is extracted with 20 parts of methyl-alcohol, and 10 ccm. of this extract are added to 150 ccm. water and 10 ccm. of a saturated solution of carbonate of ammonia in water. Pure flour gives with this test a brownish-yellow color; if adulterated it takes on a greyish-blue appearance. Sulphate of copper also influences the stability of the gluten and is used sometimes, we are told, in France and England(?). It can be detected by an addition of the yellow blood-natron, which, in presence of copper, colors red. Minute quantities cannot be detected in this manner; in such a case the flour must be burned and the presence of copper determined in the ashes.

II.—TEST FOR ORGANIC SUBSTANCES.

The detection of organic admixtures is, beyond doubt, the prime object of the offered prize. As before stated, such adulterations can be detected with certainty only by means of a microscope, in addition to the observation of a few chemical and physical properties of the flour. To begin with the most difficult, and end with the comparatively more easy tasks, we first take the

Detection of Wheat Flour in Rye Flour.

During the winter of 1880-81, when the price of rye was high, the mixing of rye with wheat flour was a common occurrence. Although this is quite harmless, from a sanitary point of view, it cannot be indifferent to the baker, because a mixture of rye and wheat flour produces a bread entirely different from that made of pure rye. This

gave rise to many difficulties, and when the rye flour cheapened, quantities of the pure article were rejected by buyers on the plea of its being adulterated with wheat flour, in order to be released from unprofitable contracts. From a large number of examinations made at that period, I have concluded that the following can be looked upon as reliable signs of the presence of wheat flour among rye: The wheat has thick-walled hairs, the walls of which are thicker than the width of the diameter of the interior canal. As already stated in the earlier part of this essay, the rye has thin-walled hairs, with walls thinner than the diameter of the canal. Even during the time of flowering, a difference in the thickness of the walls of the hairs can be detected, although the size of the diameter of the canal in the hairs of wheat is, at that time, larger than the thickness of the wall. The latter measures then from 5 to 6 micro-millimeter, against from 2 to 3 mkm. in rye. This fact demonstrates that the difference is due to a peculiarity of the grain, and can be accepted, therefore as reliable. With advancing maturity the distinction becomes more and more apparent, and the canal in the wheat hair contracts. The only exception to this rule is found in very few hairs situated on the short bulbous base. In

addition to this, most of the wheat hairs are much longer than those of the rye, and this applies even to the respective fragments found in the flour. The following measurements will explain this:

| | Wheat. | Rye. |
|--|-----------------|-------------|
| Length of hair..... | 120-742 mkm. | 50-420 mkm. |
| Diameter of the largest..... | 15-21 mkm. | 9-17 mkm. |
| Diameter of the largest hair at the bulbous base..... | 28 mkm. | 24 mkm. |
| Diameter of the smallest hair at the bulbous base..... | 9-10 mkm. | 8 mkm. |
| Thickness of the wall of the hair, average..... | 7 mkm. | 3-4 mkm. |
| Diameter of the interior canal..... | 1.4-2 mkm. | 7 mkm. |
| | rarely up to 5. | |

An exception to this rule is found, according to Berthold, in the Spelt, the hairs of which are thin-walled. One important factor must not be ignored in such investigations. A few wheat grains are often found among rye, especially in districts where but little attention is given to choice and clean seed

grain. This applies to Russia, especially Southern Russia, but even in the better cultivated districts of Northern Germany we find a small number of wheat grains among the rye, or vice versa, small quantities of rye among the wheat. No grain is absolutely pure, for even the best machines made are unable to separate the smaller wheat grains from the rye. The quantities of admixture of rye and wheat found is illustrated by the following figures:

1. A sample of rye from Northern Russia, weighing 190 g. contained 15 grains of wheat, weighing 0.45 g., or 0.24 per cent. of the total weight.

2. A sample of rye from Southern Russia, weighing 250 g. contained 130 grains of wheat weighing 3.5 g., or 1.40 per cent.; 63 grains of this rye weighed 1 g., consequently these 250 g. equalled 15,750 grains and one wheat grain was sprinkled between every 121 grains of rye.

The quantity of wheat thus found among rye is not always as large; for instance a sample of mixed Northern and Southern Russian wheat, weighing 145 g. contained only six wheat grains, 0.15 g. in weight or 0.10 per cent. In another sample which had been assorted by machinery, the wheat admixture amounted to 0.26 per cent. of the whole weight.

In view of this we must not be surprised to find a few straggling bran particles or hairs of wheat among pure rye flour, and nobody will dispute the claim of such flour to be classed as pure, as superficial inspection of the grain will never reveal the presence of the above mentioned quantities of wheat among the rye, and it is altogether wrong to form any judgment from the presence of a few particles of wheat in rye flour as to the intentional mixture of the two cereals.

I have lately discovered that the hairs, in a cross-section of their lower part, are not always circular, but often elliptical, and three or four-sided, especially among the wheat. This is a fact worthy of notice, for if a hair elliptical in a cross-section, is viewed from the narrow side of the ellipse, the interior canal appears narrower than if it is seen from the wide side. So when we place the hairs under the microscope it is necessary to manipulate the slide by gentle pressure or beating in such a manner, that the hairs appear in different positions. A rotation around their longitudinal axis can often be obtained by the addition of a drop of water or alcohol at the margin of the cover glass. To exclude any possible expansion of the starch grains, we can place the flour into alcohol, before putting it under the microscope.

In the hairs of rye the cross-section is generally more nearly circular than in that of the wheat or spelt, and mistakes are almost impossible. The hairs of "cheat," *Bromus secalinus*, are often found among flours. The walls of these hairs are slightly thickened, but their interior canal is wider than that in the rye. The hair itself is somewhat conical in shape, but of varying length. Its diameter at the base is 23 mkm.; in the cylindrical part 8 mkm. Thickness of hair walls at the base, 2.9 to 3.8 mkm.; of interior canal 8.7; in the upper portion of the hair the walls have a thickness of 2.1 mkm., while the diameter of the canal measures 2.8 mkm. [Mkm. mikromillimeter, one thousandth of a millimeter or 0.000394 of an inch.]

It often happens that beginners mistake, for instance, a fragment of linen, or any other fiber, for particles of hair. But a simple examination of linen fiber soon reveals the difference, and besides, we possess a beautiful and very efficient reagent for this work in the sulphate of anilin, obtained by dissolving the commercial sulphate of anilin in alcohol. This reagent colors wood and woody cells yellow, but does not affect the not-woody cells. If a small part of this

solution is added to our microscopical preparation, we find that after five or ten minutes, the wheat hairs are colored distinctly yellow, because their walls are more or less woody; rye hairs with their thin walls, are colored light yellow, and linen, flax or cotton fibers not at all. Jute fiber colors more than wheat hairs and becomes golden yellow.

The objection has been raised that the hunting for hair particles is a hard task; there is truth in this, but the difficulty can be obviated when the starch sample has been hydrated. Then the starch grains no longer obstruct the vision, the hairs become plainly apparent and we are enabled to distinguish their characteristic differences. If we possess, however, in connection with our microscope, a polariscope, there is no necessity for hydrating the starch, for after turning the prism into the proper position, the hairs shine bright on a dark background. For the measurement of the walls of the hairs the plain glasses are again used with the microscope.

BIG CROPS A BLESSING.

The farmers of Iowa, says the *Financial Chronicle*, have been known to mourn because their crop of corn was so abundant, the demand for it so light and the price so low that they could only utilize it all by burning a part of it as fuel. The rest of the country appeared to sympathize with these afflicted agriculturists, as though they were the victims of misfortune, and as though it were not true that corn is as cheap and convenient a fuel as any in Iowa. Again, in writing about the export trade, complaints are sometimes made which imply the doubt whether the beneficial effect of good crops is universal. Indeed, not unfrequently it is half assumed to be a misfortune to us when the foreign supply is so large, the consequence of good crops in Europe, that we can export little, except at a low price. . . .

There are some facts which apparently favor this superficial view; for it is perfectly true that the farmers get full prices when trans-Atlantic supplies are light and the demand active. It is, nevertheless, a superficial view and a fallacious theory. When all the facts are taken into the account it will appear that while we are benefitted by good home crops, we are benefitted more if the world has good crops. In this case American farmers receive a great deal more money for their produce and the country as a whole gains perhaps a few millions more of metallic money. In the other case the whole community is enabled to save a larger sum in the cost of living. Take the situation as it now bids fair to stand for a year to come. We shall have very cheap food. Wheat flour is the favorite material for bread making. Its price during the next twelve months, unless there is some occurrence which can not now be foreseen, will average at least a dollar a barrel less than the mean price of the last four years. The demand for other breadstuffs, substitutes for wheat when it is high, will be lessened and the price will be correspondingly depressed. What the saving in the cost of living, in consequence of these things, will be, can not be estimated, of course. But it is a conservative statement that it will amount to more than all the taxes—National, State and local—which they will have to pay, by whom the cost of the food they consume will be felt as a burden. There are among others, the great wage-earning class, upon whose condition very largely depends the condition of the retail trade, and consequently the wholesale trade of the country. Were the foreign crops short the American farmers would undoubtedly get more for their produce, the most of the increment coming from domestic consumers, the rest from abroad, the first part being a mere transfer of money from one set of American pockets to another, the other being a positive gain.



BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO.,
Columbus, Ohio.

Office and Factory, 5th Street, north of Naughten.

BUCKWHEAT FLOUR

Always commands a better price, and gives better satisfaction to the consumer when made by the aid of Crausons' Silver Creek Roller Buckwheat Shucker. This is a fact which we can demonstrate to any miller who will write us.

G. S. CRANSON & SON,
Silver Creek, N. Y.

MILL COGS AND CONVEYOR FLIGHTS.

Cogs to order on shortest possible notice, large stock of superior flights on hand.

N. P. BOWSER,
South Bend, Ind.

FOR SALE!!

Nine full set of the celebrated Stevens rolls, made by the John T. Noye Mfg. Co., Buffalo, N. Y. Six of them were sent to the Commercial Mills, Detroit, Mich., in December last, but were taken from there without having been put in operation, or having been touched by fire, and our rolls substituted. They were made from the present patterns of the John T. Noye Mfg. Co., and have their late so-called Holt belt drive (or words to that effect). We will furnish smooth rolls with these machines, or any kind of corrugations, to parties who may object to the Stevens corrugations. Three set we have recently taken from the celebrated Elkhorn Mills, of H. D. Bush & Co., Leavenworth, Kan., where our rolls are being placed. All of these rolls were made at Ansonia, Conn., and are of the same make as those used by the John T. Noye Mfg. Co. We offer these rolls at half list price. Please write for particulars. Respectfully,

NORDYKE & MARION CO.,
Indianapolis, Ind.

SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1½ cents for each additional word. Cash with order. Three consecutive insertions will be given for the price of two.

SITUATION WANTED.

In a custom grist or flouring mill by a man who has had about two and one-half years' experience as a miller, and can furnish best of references. Address, T. H. NICHOLAS, Forestville, Chautauque County, N. Y. 6tf

SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1½ cents per word for one insertion, or 4 cents per word for four insertions. No order taken for less than 60 cents for one insertion, or \$1 for four insertions. Cash must accompany the order. When replies are ordered sent care of this office, 10 cents must be added to pay postage.

FEED MILL FOR SALE.

A portable iron disk feed mill for sale. Well built, large capacity, and in perfect order; unpacked, as delivered from factory. Price, \$40. Address, O. F. F., drawer 209, Buffalo, N. Y.

NIAGARA MILLS TO RENT

For a term of years. Having seven run of stone and machinery for flouring. Is very conveniently located in the City of Lockport, N. Y., on the Erie Canal. Operated by a Lefell turbine. Buildings of stone, slate roofs, ample storage capacity and good water power. Wheat taken directly into the mill from boats, also from teams. Prospects for a large crop of wheat good. Two railroads can take flour in any direction. This is the time to get ready for grinding the new crop. Terms liberal. Apply to L. A. SPALDING, Lockport, N. Y. 812

MILL FOR SALE IN EAST VIRGINIA.

A never-failing water-power flouring and grist mill can be bought at a sacrifice. Unavoidable circumstances forces this property in market. Brick building 44x48. Good investment. For particulars address, C. C. CHAPMAN, Smithfield, Isle of Wight county, Va. 710

STEAM FLOURING MILL FOR SALE OR TO LET.

New buildings and new modern milling machinery. Patent rollers for making new process flour. Also two run of stone for rye flour and feed, all in complete working order. Large local trade. Situated on line of railroad. Inquire of FIRST NATIONAL BANK, Fishkill Landing, N. Y. 811

FOR SALE CHEAP.

One 6-horse power engine and 10-horse power boiler, all complete, price, \$350; one 8-horse power engine and 10-horse power boiler, price, \$375; one 10-horse power Portable complete, price, \$350; one 10-horse power Russell Traction, price, \$500; one 4-horse power vertical engine, price, \$120. Call or address for particulars EZRA F. LANDIS, Lancaster, Pa. 282

YOU CAN BUY THESE CHEAP.

1400 4x8 elevator cups, made by W. P. Myer, 1200 4½x8½, " of Indianapolis, Ind. Three McCully Corn Cob Crushers. Each of the above articles is brand new, in perfect condition, just as they left the factories, never having been unboxed, and will be sold very cheap for cash. Address S., 30 care THE MILLING WORLD, Buffalo, N. Y. tf

INDIANA MILL PROPERTY AT A BARGAIN.

We have for sale a 125-barrel mill, with fifty acres of land, at Hagerstown, Ind. This mill has recently been remodeled at a cost of \$14,000. Fine wheat section. Good home market. Also low freight rates to Cincinnati and Baltimore. Property cost \$25,000; will be sold for half that amount, on easy terms, to parties who have money to run the business. For further particulars address SINKER, DAVIS & CO., Mill Builders and Furnishers, Indianapolis, Ind. 1013

MILL FOR SALE CHEAP.

Situated in the town of East Bloomfield, Ontario Co., N. Y. Mill has 3 run stone and all machinery for doing first class custom and merchant work. There is eight acres of land. Good house, barn and plenty of fruit, the mill is driven by spring stream that never fails. Situated ¾ mill from depot. Reasons for selling ill health. Those wishing to buy mill property would do well to see this. BURRELL BROS., East Bloomfield, N. Y. 811

FOR SALE.

Water mill at Whitehall, Trempealeau county, Wis. Mill built in 1878. Five run of stone. Mill easily converted into roller mill. Plenty of water all seasons. Good custom trade. Can command trade of Wisconsin Pinery. Home demand for all. Wheat supply from first hands. Mill forty rods from Depot. Side track to mill can be procured. Whitehall is a thriving town and county seat. Good reasons for selling. Address, WHITEHALL MILL CO., Whitehall, Wis. 7tf

MILL FOR SALE.

I want to sell one-half interest in the "Brick City Mills" and water power. Mill building is of brick, 40x80 feet in size, and six stories high. Fitted out complete with seven sets of rolls and four pairs of burrs. Thoroughly repaired last August at a cost of between \$4,000 and \$5,000. Turkey river is here 200 feet wide, with rock bottom and sides, making one of the cheapest powers to maintain in the state. The power is double the amount ever used. Price for half interest is \$11,000. Address J. G. BOTSFORD, Clermont, Iowa. 913

BEST OPENING IN THE UNITED STATES.

We have recently remodeled a hominy mill with flour machinery, at Omaha, Neb. Omaha has 50,000 people, and is without a flouring mill. Kansas and Minnesota flour sells wholesale in sacks at \$3.50 per hundred weight. Northern Nebraska hard spring wheat and Southern Nebraska winter wheat can be had in quantities in Omaha at 75 and 80 cents per bushel. We will sell the property at a bargain, on easy terms, to parties who have money to operate. For further particulars address SINKER, DAVIS & CO., Mill Builders and Furnishers, Indianapolis, Ind. 1018

SALE OF MILL PROPERTY.

The undersigned will on the 10th day of July, 1884, sell at public sale on the premises, a valuable custom water mill, situated at Perkinsville, Madison County, Indiana, about twelve miles west of Anderson and twelve miles east of Noblesville. Good pie leading to each place. There is now in the mill three-run of burrs. Water power is sufficient to run mill with capacity of 100 barrels in twenty-four hours. Mill is frame and four stories high, situated in excellent wheat and corn country and doing good business. Cause for selling, owner is dead. For particulars address the undersigned, at Perkinsville, Madison County, Indiana. GEORGE V. ZELLER, Administrator. 911

VALUABLE MILL PROPERTY.

Roxbury Mill, on Antietam River, for Rent or for Sale on easy terms. This property comprises a most desirable flouring mill in complete order with three run of burrs, excellent and never-failing water power, 23 acres rich land, good two-story dwelling house, situated one mile northeast of Breathedsville, on Washington County railroad, and five miles southeast of Hagerstown, and on the road leading from the Hagerstown and Sharpsburg pike to the Hagerstown and Boonsboro pike, in as fine and healthy agricultural district as can be found. A full supply of wheat can always be had by wagons, direct from farmers in the neighborhood. The mill has always had local custom for all the mill feed and much of the flour made. For terms, &c., apply to GEO. T. GAMBRIEL & CO., Baltimore, Md., or F. F. McCOMOS, Attorney, Hagerstown, Md. 614

"GRAND VALLEY MILLS" FOR SALE.

At Triplett, Mo. Mill building is 28x80 feet and four stories high. Built by G. & W. Todd & Co., of St. Louis, Mo. It has one pair of 3½-foot stones for wheat; one pair 30-inch, for corn; a two-reel chest, 24 feet long; a No. 4 Martin's centrifugal reel; a No. 1 Smith purifier; a Eureka smutrer, and a corn sheller. All new and in good running order. Engine room, 18x28 feet. Engine and boiler built by the Erie City Iron Works. Engine, 12x20; boiler, 38 inches by 12 feet, tubular; all new and in good order. Located in the town of Triplett, Mo., 75 feet from Wabash railroad track. Town contains about 700 inhabitants. Mill has a good local trade established, and in a good wheat-raising district. Abundance of water, and fuel plenty and cheap. All the facilities for doing a No. 1 business. Satisfactory reasons given for selling. A good opening for a practical miller for doing a good business. For terms and price address MADDOCK & SHIFF, Triplett, Mo. 912



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Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with any manufacturing or mill furnishing business. Its editorial opinions cannot and will not be influenced by a bestowal or refusal of patronage. It has nothing for sale, but its space to advertisers and itself to subscribers.

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FIRE RISK.

THE question of fire risks, not only in mills, but in buildings generally, cannot be discussed too much or earnestly; not half the attention necessary is devoted to it by the press, outside of a spasmodic outburst of indignation, when the report of some disastrous conflagration caused by negligence or indifference astonishes the public. The vast majority of buildings are put up with utter disregard for safety, and even where they are apparently fire proof outside, we may find that the inside has no facilities whatever to fight the fire fiend. Insurance journals are complaining every week about the immense, but steady increase, of the losses by fire. The question is "Who is to blame?" As long as reliable insurance companies can be found who are willing to insure even the most pronounced fire traps, so long the owners will care little, if any, whether the building is safe or not. Insurance companies are supposed to inspect the premises before accepting any risk, but how often are those inspections what they should be? They are not, by any means, always impartial, otherwise it seems impossible that a large six-story building, to which we could point, full of material of easy combustion, can be insured at an almost minimum rate in first-class companies, when such building has only one single inch water pipe on the second floor, and neither water nor fire extinguisher anywhere else. Such cases as this one would come under the head of large fires, involving hundreds of thousands of dollars of insurance, and undoubtedly, there are many such, and fire losses due to the destruction of such buildings, should be placed where they belong, to the negligence of the companies. There is something very serious about the contemplation of 1,269 fires, with a loss of \$2,099,947 in New York city alone during the first six months of the

present year. Carelessness on part of the insurer as well as on the part of the insured, undoubtedly causes the largest portion of all the losses. The insurers will have to lead the reform, if we expect any improvement, because they are organized, and a thorough understanding of the matter is of vital importance to them. The insured, being by far the majority of all classes and grades of intelligence, can not or will not understand, the advantages of buildings constructed as fire proof as possible. Let their owners, however, understand that they cannot obtain an insurance unless they comply with certain rules, and it will not require many fires in their neighborhood to make them accept the proposals of the insurance companies. Many fires must be, and perhaps always will be, classed as "unavoidable," due to some accident beyond the control of man, but their number will always be small as compared with the other "avoidable" cases; and, perhaps, if these latter can be eliminated, the former class will decrease in numbers at the same time.

Better education and increased intelligence will, after a while, decrease the risk from careless handling of light and fires. Dust explosions caused by open lamps, kindling of kitchen fires by means of kerosene oil, blowing out of lamps, etc., etc., all come under this head, but we cannot expect to remedy everything at once; a beginning must be made somewhere, and it seems that the most efficient way would be to "organize" the insurance companies so as to have the same rules under which the insured can obtain a policy; then let those rules be as rigid as possible and no favor shown to anybody. There may be serious difficulties in such a scheme, but the result will, beyond doubt, prove satisfactory after a short trial.

THE *Insurance Critic* publishes a statement to the effect that not more than one-seventh of the 7,000 men attending the 10,000 steam boilers in use in New York City, are trustworthy and qualified to do the work which is required of them. If such a state of affairs can exist in a crowded city, the fact ought to be published as widely as possible, and the different engineer's associations should give their attention to the matter for the sake of the reputation of their members as well as for the welfare of the community. Nobody denies that a steam boiler in incompetent hands is a constant menace to the neighborhood; it may operate safely for years, but nobody can tell whether an explosion may not occur at any moment. We remember a case where a large public hall and a five-story building were two years ago improved by putting in a steam heating apparatus, but the colored janitor of the building, who had never cared about a larger boiler than one on his kitchen stove, was requested by the Real Estate Commissioners of the Association, who owned hall and building, to take charge of the boilers. Fortunately for the community, he was too honest to accept so responsible a charge, and in consequence, his services "were no longer required." How many cases could be found, where men, less conscientious, accept such responsible positions without the faintest idea about the risks, and simply trust to "luck and providence" to see them through all right. It is high time that a law be strictly enforced that none but licensed and examined men be allowed to take charge of a boiler or engine.

UPON another page appears an announcement by the Consolidated Middlings Purifier Company, of Jackson, Mich., which will undoubtedly attract the attention of every reader of THE MILLING WORLD. The company states that this notice is promulgated "in justice and fairness to all concerned," and because the suits "now pend-

ing . . . have reached such a stage as leaves no reasonable doubt of their early decision against manufacturers and users of infringing purifiers." A decision by the U. S. Supreme Court, upholding or invalidating the various patents of this company, is something to be strongly desired, and it is gratifying to have the assurance that such decision may be anticipated in the near future. If the patents are declared invalid a big sigh of relief will go up from the dusty community, while if upheld, the fraternity will know what it may, with certainty, depend upon. The company is confident its patents will be sustained, and in such event every miller who may be using a purifier which infringes upon these patents, and is not licensed thereunder, will be expected to step up and settle. It takes a long purse and "a heap" of confidence to carry a patent suit to the U. S. Supreme Court, as its decision is final, and usually signifies gratifying profit or serious loss, with the chances so largely in favor of the latter as to deter the average mortal from indulging in it. We shall await with no little interest the outcome in this matter.

IT is currently reported that the Stilwell & Bierce Mfg. Co. will, in the new model mill they are erecting at Dayton, Ohio, for experimental and exhibition purposes, make the attempt to dispense entirely with middlings purifiers. It is not unlikely this is a somewhat exaggerated report, although, under present systems of milling, fewer purifiers, and smaller, are found necessary than before rollers were so generally adopted. The system of gradual reduction by means of rolls, has made it possible to eliminate a very large proportion of impurities which formerly the purifier was relied upon to take care of, and the greater care exercised in cleaning the wheat preparatory to granulation, has also served to materially lessen the amount of impurities which, a few years ago, was ordinarily mixed in with the middlings. It is not impossible that the purifier, as ordinarily constructed and operated, may be dispensed with, but, until the success of the experiment which it is alleged the Stilwell & Bierce Mfg. Co. are about to make, —an allegation by the way which lacks authoritative confirmation—has been demonstrated to be successful, the demand for purifiers will not materially fall off. The milling fraternity could take in a new system with considerable relish just now, and we wouldn't like to say the S. & B. Co. were not developing one that will be successful—they work very quietly down at Dayton—but this report has a somewhat thick consistency.

ALTHOUGH scientific studies in many branches are of a comparatively recent date, yet their importance is being felt and appreciated more and more as the years roll by. As a token of this we note that the Canadian government has voted \$25,000 for the expenses attending the meeting of the British Association for the Advancement of Science, at Montreal in August. This is as it should be. Almost everybody thinks it is just and fair to see governments giving large sums of money for international and other exhibitions, but the largest majority seldom stop to think that progress in arts and industry has, in a large measure, been made possible only by the application of scientific discoveries. The remuneration which scientific men receive for the discovery of new facts, consists principally in the "honor" derived from it; the economical benefit is generally harvested by the successful inventor who can apply the principles discovered. It is gratifying to know that the "theoretical scientist," only too often looked upon as a visionary or dreamer as compared with the "practical inventor," is slowly, but surely, receiving that share of honor which is due

to him for his labors in the field of the advancement of knowledge, and we are glad to note the liberality of the Canadian government in this connection.

THE committee appointed by the English government to investigate and report upon the condition of the industrial and technical schools on the European continent, make a very strong plea in favor of keeping museums and art galleries open on Sundays for the benefit of those who are unable to attend during the week. It will be remembered that this same question was extensively discussed in connection with the Centennial Exhibition, but, at the time, resulted in favor of Sabbath keeping, very much to the disadvantage of many thousands of people, as well as to the more or less empty treasury of the exhibition. It is to be hoped that the coming Electrical Exhibition at Philadelphia, as well as the International Exhibition at New Orleans will heed the warnings and keep their gates ajar on Sundays, thus giving thousands an opportunity to improve their mental status, an opportunity which would be lost to them if Sabbath laws are rigidly enforced. After all, if a man cannot have any educational advantage during the week, it is certain that nobody should deprive him of the right to obtain the desired knowledge on Sunday.

FROM carefully collected statistics of the Cincinnati *Price Current*, we learn that the results of this year's winter wheat crop will be between 340,000,000 and 350,000,000 bushels, with an improvement in quality over last season's growth. The spring wheat crop continues favorable, and gives promise of 130,000,000 to 135,000,000 bushels. Both combined, will represent one of the largest crops harvested during the past ten years, only two years in that space of time could boast of larger quantities, viz., 1882 with 504,185,000 bushels, and 1880 with 498,549,000 bushels. With such crop prospects, the future should look bright enough even if the prices do not come up to the expectations of dealers and speculators.

IN all probability the Democratic Convention now in session at Chicago will have named its candidate for the Presidency by the time this paper reaches its readers, and nothing will remain but a vigorous campaign to keep alive the popular interest. Democratic success means government employment for something more than 200,000 hungry and weary politicians. Republican success means four years longer "pap-sucking" by present employees. The public heart must be fired, and it has its choice.

ALTHOUGH we are apt to look upon the American merchant marine engaged in foreign trade as a thing too insignificant to notice, we nevertheless find from statistical tables that during the first three months of the present year 1,131 American vessels with a tonnage of 604,335 entered into, and 1,378 vessels with 698,808 tons cleared from the ports of the United States.

THE cheapest wheat for the past thirty years was recorded in Baltimore on July 1st. According to telegraphic dispatches the price was 94 cents. Fortunately speculative prices do not exert as strong an influence upon the home market, as many people are apt to believe, and legitimate industry does not suffer by "bull and bear" movements as does the speculative trade.

BETWEEN January 1st and March 30th of the present year the United States imported gold and silver coin and bullion representing a value of \$5,091,482—and exported \$17,264,621,

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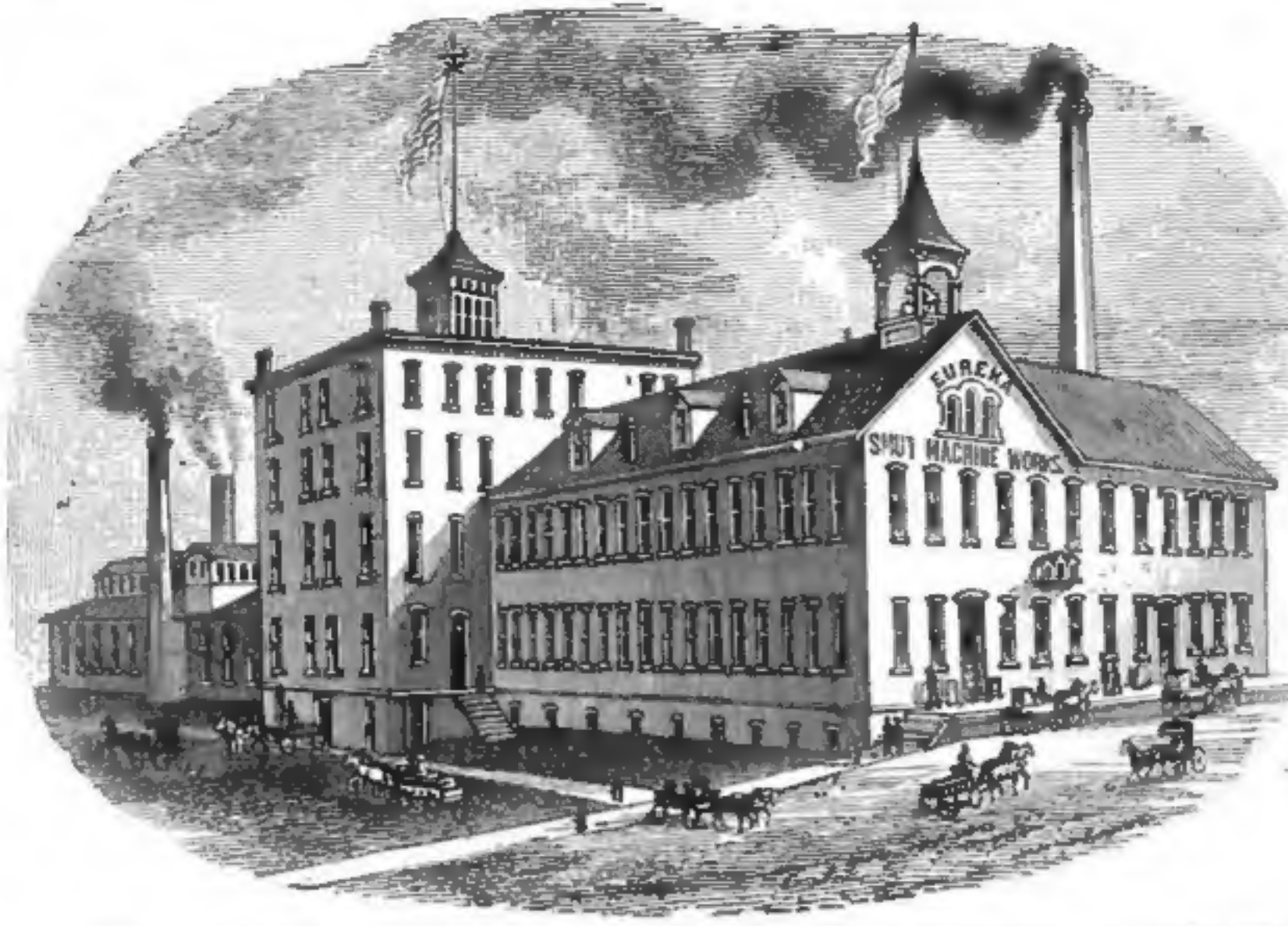
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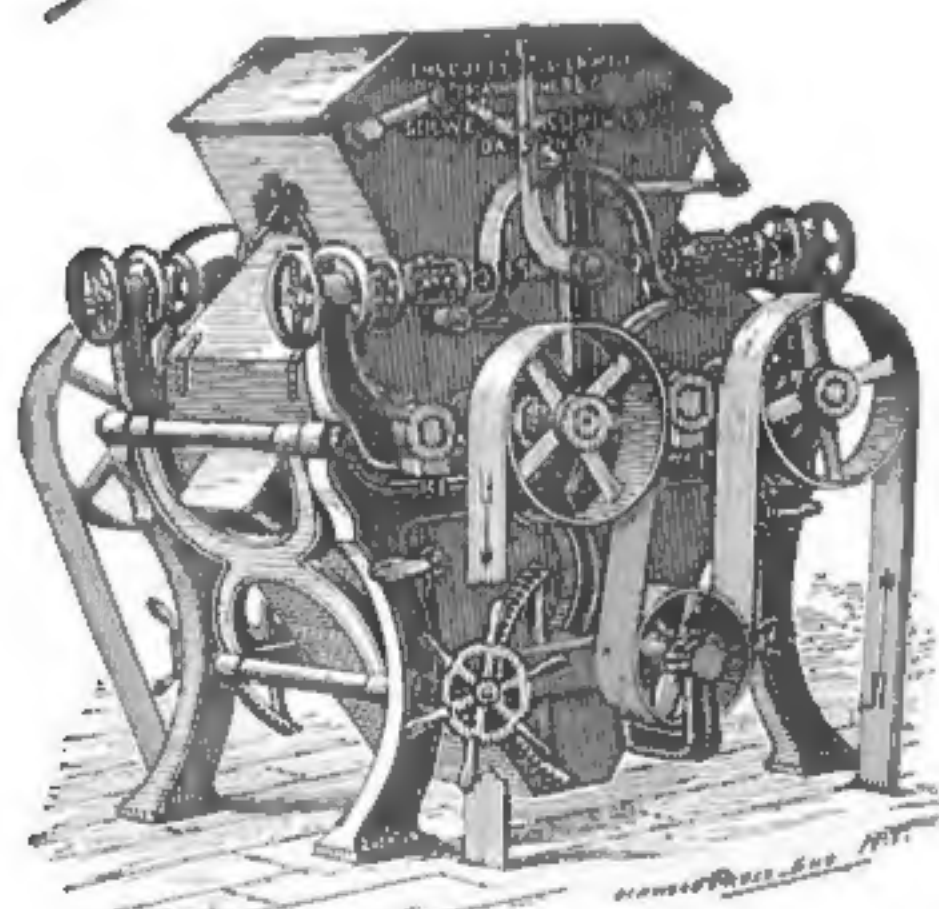
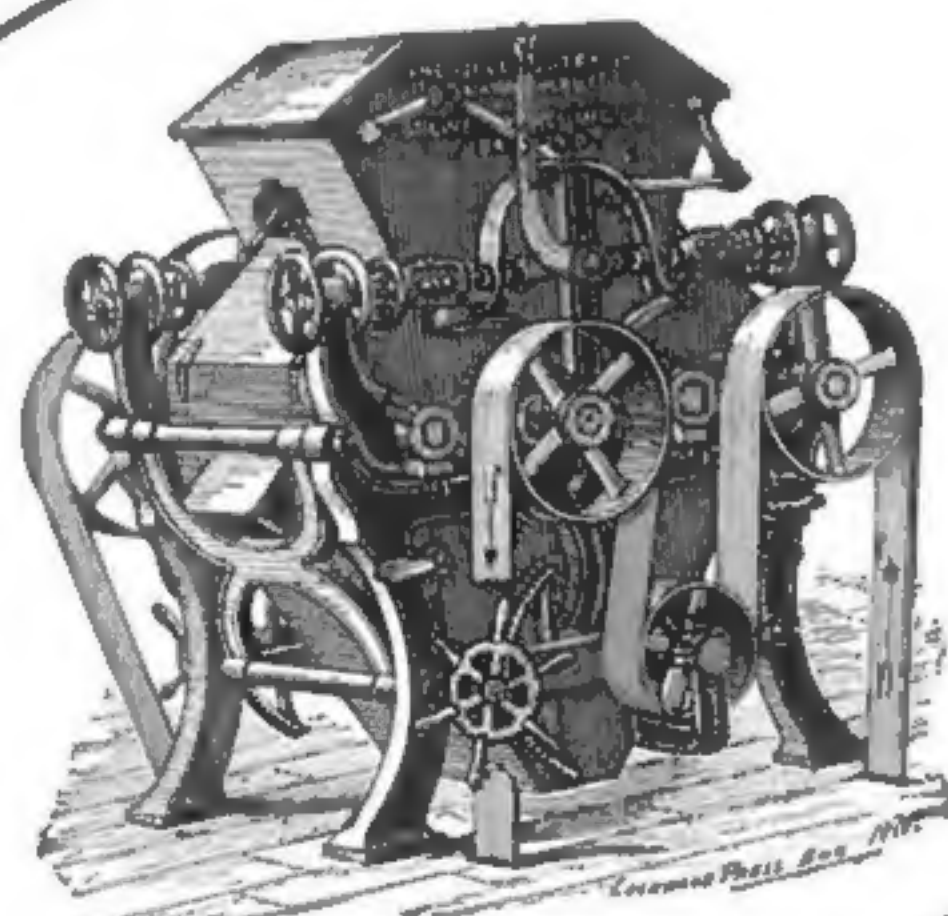
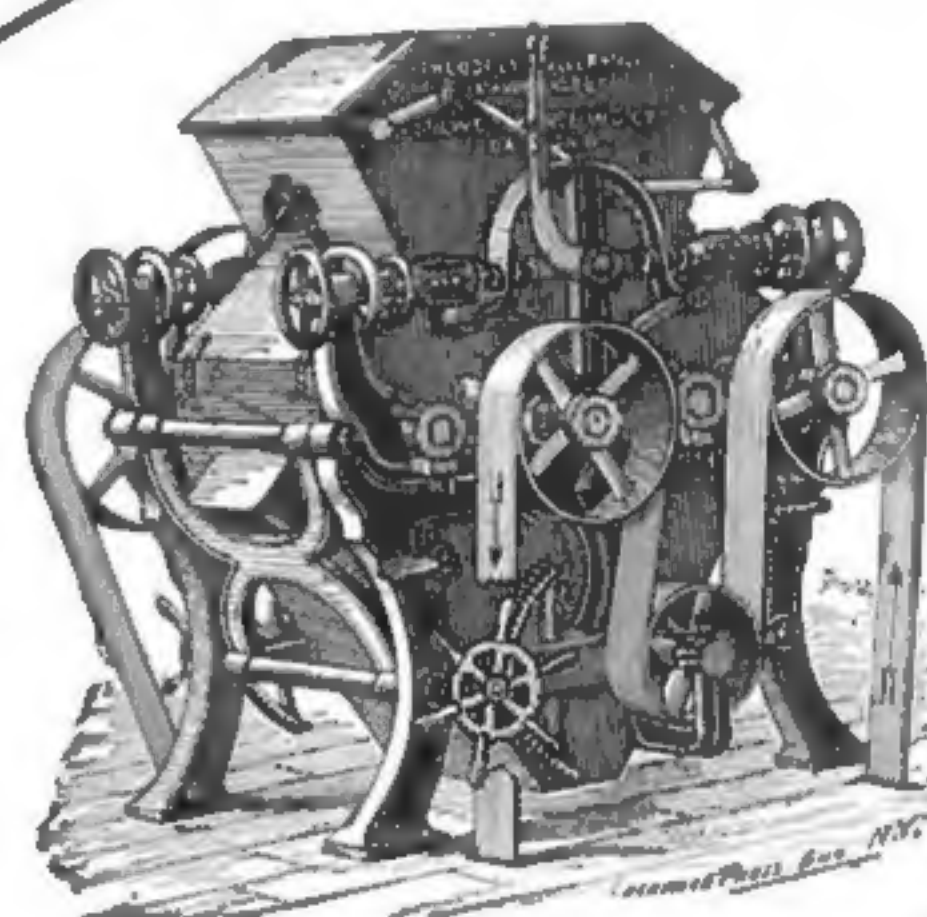
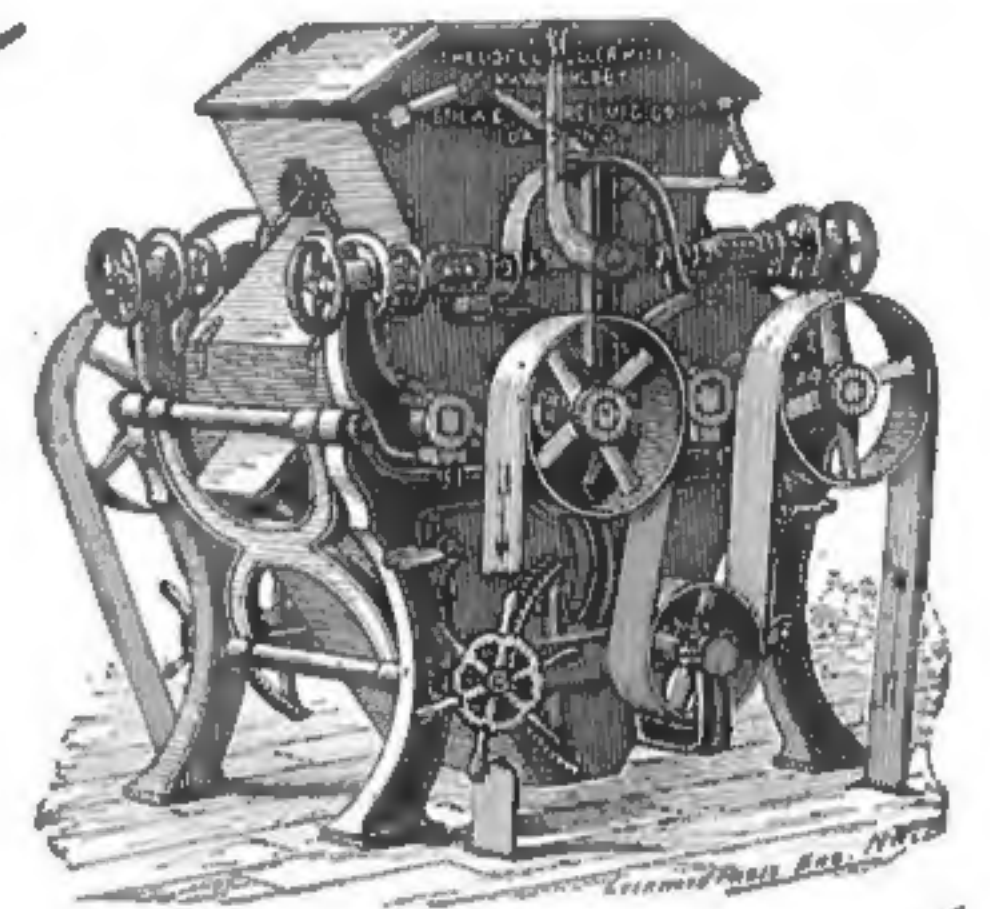
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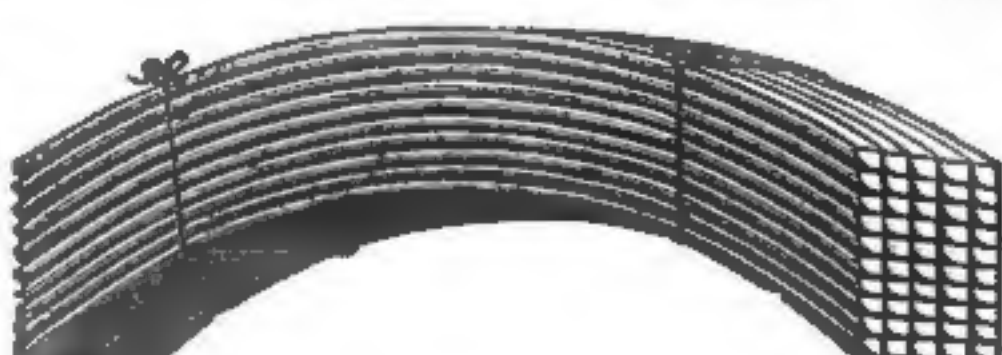


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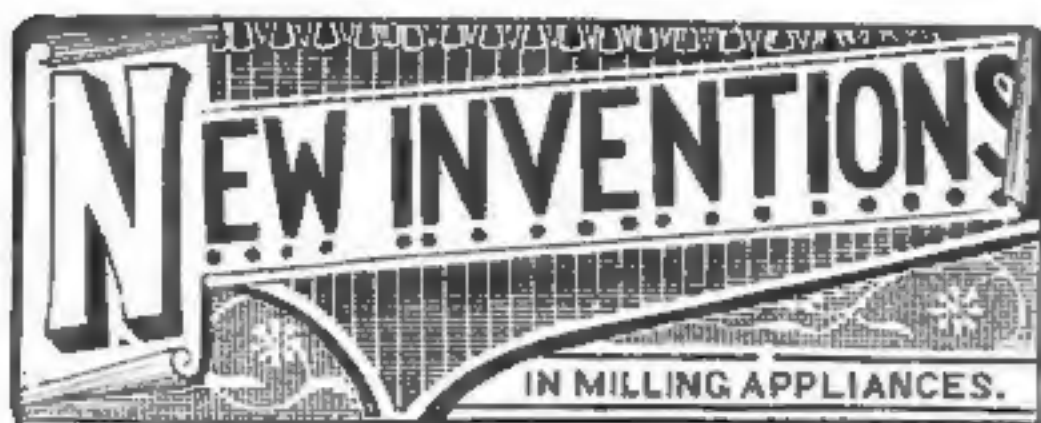
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**FEED REGULATOR.**

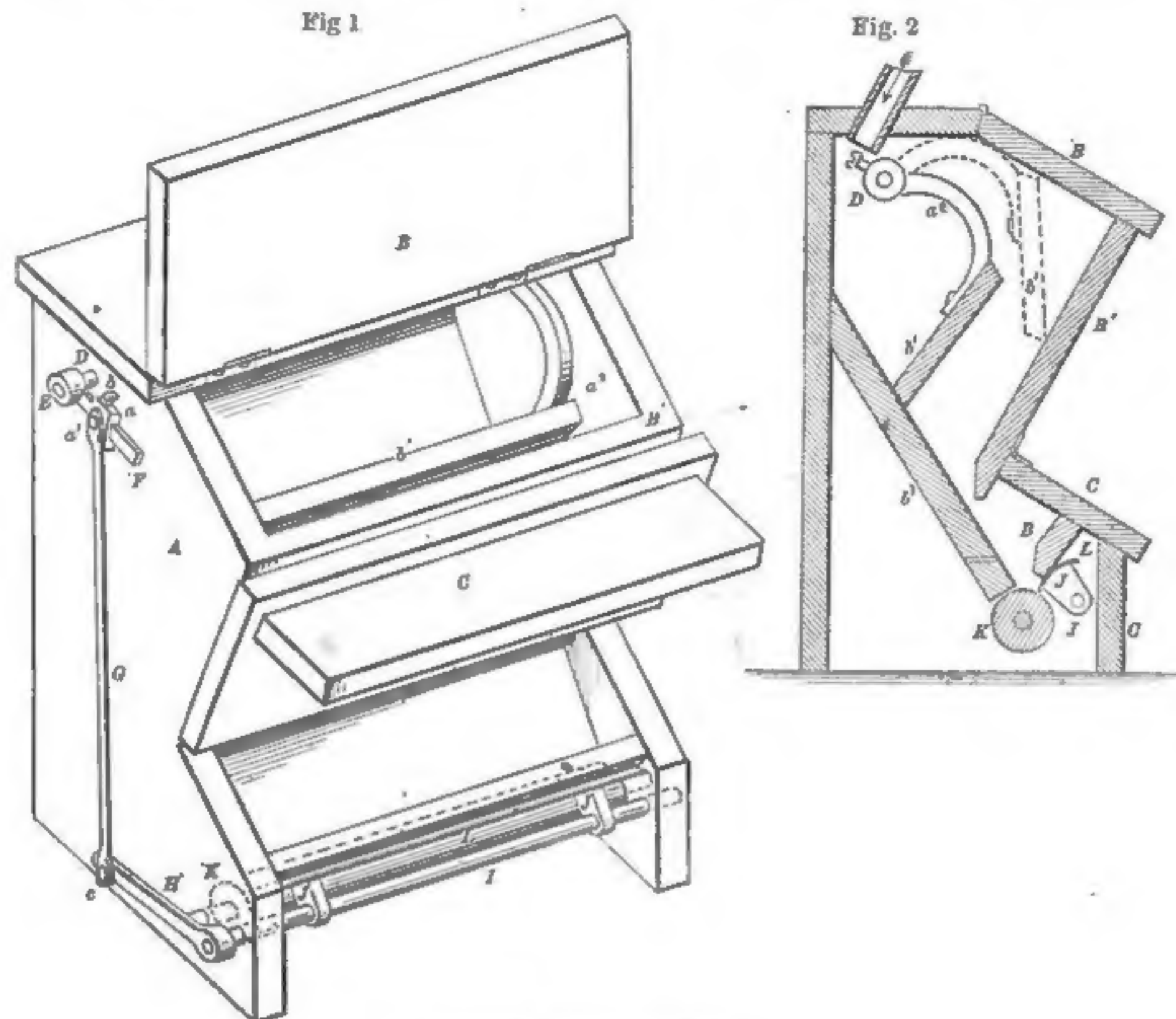
Letters Patent No. 300,816, dated June 24, 1884, to William G. Thompson, of Wabash, Indiana. This invention relates to feed-regulating devices; and it consists in certain improvements in the construction of the same, the object being to evenly feed a desired quantity of grain or stock material to stones or between rollers, automatically, by the weight or pressure of the grain. In the accompanying drawings, Fig. 1 is a perspective view of the device, showing the grain-receptacle, valves, shafts, and connections. Fig. 2 is a vertical section showing the interior parts of the device. The operation is as follows: Grain or other material is let into the upper part of the receptacle A above valve *b* and against the inclined face of back *b'*, the slide on arm F being adjusted to regulate the amount of feed desired to deliver to gate L. When sufficient grain has accumulated on valve *b'* to push it back and open it, the grain or other material will fall through said opening and pass down on to roller K, which revolves toward the feed-gate, carrying the grain between the under face of said gate and said roller to the grinding stones or rolls. When the valve *b'* moves away from back *b'* by means of shaft D, arm F, rod G, arm H, and shaft I, the feed-gate is opened, or its lower edge is moved away from the face of roller K, thus permitting the grain to pass between the roller K and said feed-gate. An inlet-spout, M, is inserted through the top of box A, through which grain is brought from above, as shown in Fig. 2.

PORTABLE GRINDING-MILL.

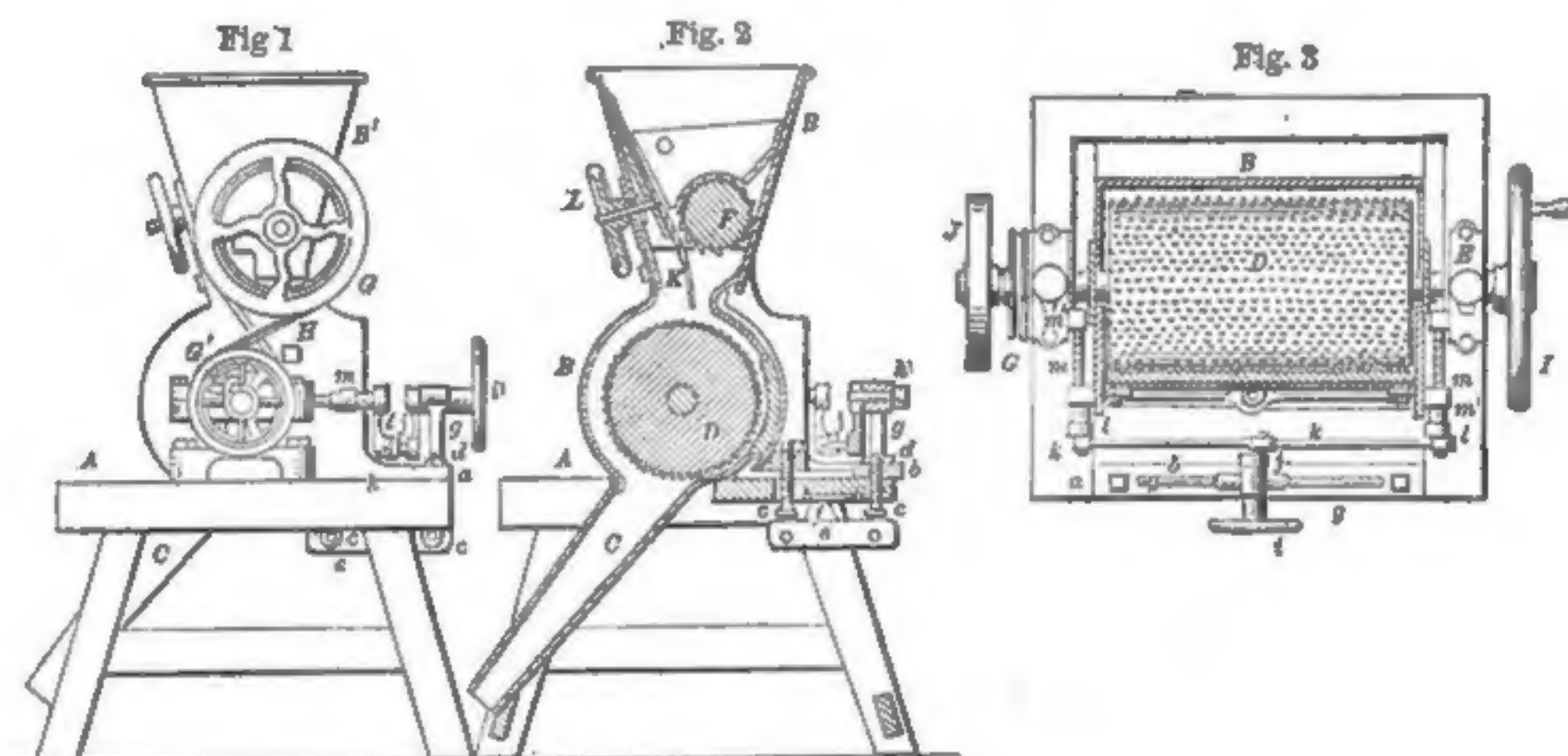
Letters Patent No. 301,020, dated June 24, 1884, to Reinhold Waak and Carl Jagusch, of Chicago, Ill. This invention relates to an improved grinding-mill; and the object it has in view is principally to improve the means employed for adapting it for use with different sizes of grain, and to reduce such grain to different degrees of fineness. Figure 1 is a side view of the mill complete; Fig. 2, a vertical central section of the same, and Fig. 3 a plan with parts removed. A represents the base of the mill, upon which are mounted the parts which inclose the feed and grinding rolls. The inclosing-casing is formed of two parts—viz., a cylindrical roll-casing, B, and a receiving-hopper, B', securely bolted together, as shown. Casing B is provided on one side, at its base, with extensions *a*, connected by cross-pieces *b b'*, which rest upon the base A. Through the center of these cross-pieces *b b'*, and through base A, are passed bolts *c*, screw-threaded on their upper ends, where they are provided with nuts *d*, and at their lower ends are secured to a yoke, *e*. Yoke *e* is provided with an upwardly-projecting lug, *f*, which presses against the under side of base A, and when the nuts *d* of bolts *c* are screwed down tight this lug presses against said base and serves to hold casing B and hopper B' firmly in position. Elongated slots are formed through base A for the passage therethrough of bolts *c*, the object of which will be explained. Formed at or about the center of cross-piece *b*, is a bracket *g*, in which is mounted a shaft, *h*, provided at its outer end with a hand-wheel, *i*, and at its inner end with a crank-arm, *j*, to the pin of which is attached a rod, *k*, which is attached at each end to the pin of a crank-arm, *l*, which are secured to feed-screws *m*, each mounted and turning in suitable internally-screw-threaded bearings, *m' m''*, on the sides of casing B, and the

boxes supporting the shaft of the grinding-roll D. The shaft of this grinding roll passes through elongated slots made in the ends of the casing, and has end bearings in the boxes E E, secured to the base-frame. By the arrangement of parts thus far described, it will be understood that by loosening the nuts *d* of the bolts *c*, and by turning the hand-wheel *i*, motion will be imparted to the crank connections and transmitted to the feed-screws, which will move the casing B and its hopper backward

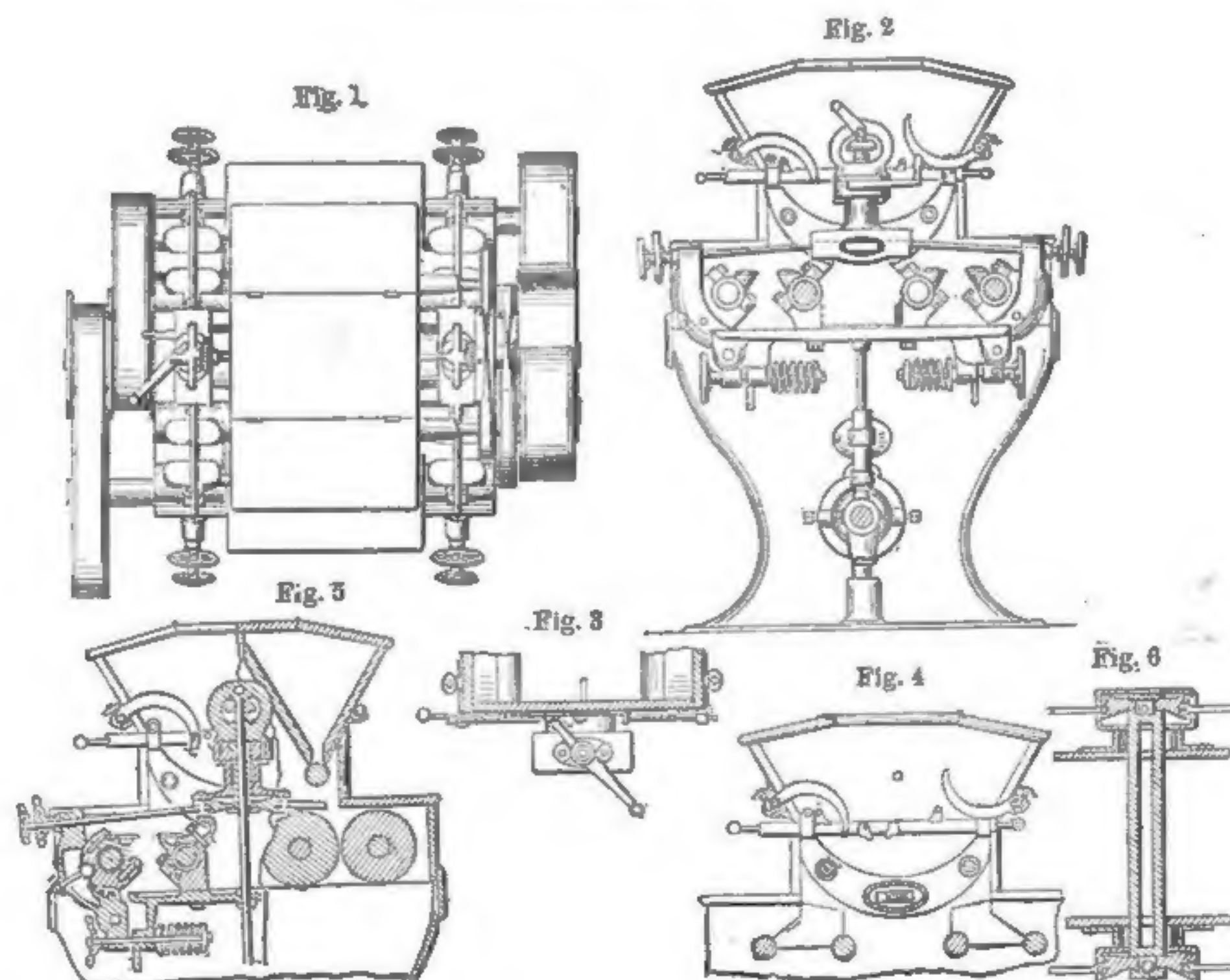
the interior of said casing are carried to or from roll D, and the space left between the two grinding-surfaces thus diminished or increased. The roll D, and also the one F, to be referred to, are preferably made of steel, and the grinding-teeth with which they are provided are formed like rasp-teeth. The journals of the upper roll, F, which is situated within the feed-hopper B', have bearings in the sides of said hopper, and at one end project out sufficiently to accommodate a pulley, G, which is connected by



FEED REGULATOR.



PORTABLE GRINDING MILL.



ROLLER MILL.

or forward, the movement of the casing independently of the grinding-roll being permitted by the slots in the ends of said casing. The casing B is provided with a discharge-spout, C, which passes through an opening in the base A, and upon one side of the inner surface of said casing are formed the grinding-teeth *n*, which form one of the grinding-surfaces in connection with the grinding-roll D. It will also be understood that by moving the part B backward or forward the teeth formed on

cross-belted H with a pulley, G', secured to the journal of the roll D, whereby when power is applied to the roll D by means of hand-wheel I or pulley J the upper roll is revolved in the opposite direction to roll D. Hinged to the inner surface of hopper B' is a strip, K, which extends down to within a short distance of roll D, and acts as a guide to direct the grain between the teeth of said roll and those formed on the inside of casing B. To strip K is secured a screw which projects out through the side of the

hopper, and is provided on its outer end with a hand-wheel, L. Secured to said screw, intermediate one side of the hopper B' and strip K, is a sleeve, *o*, which adjoins said strip and at all times affords it a rest, the sleeve being fixed to the screw to have simultaneous movement with a strip K. It will be seen that by turning the hand-wheel L the strip K is carried toward or withdrawn from the roll F, and the space through which the grain is to pass thus diminished in size or enlarged.

RE-ISSUE.**ROLLER-MILL.**

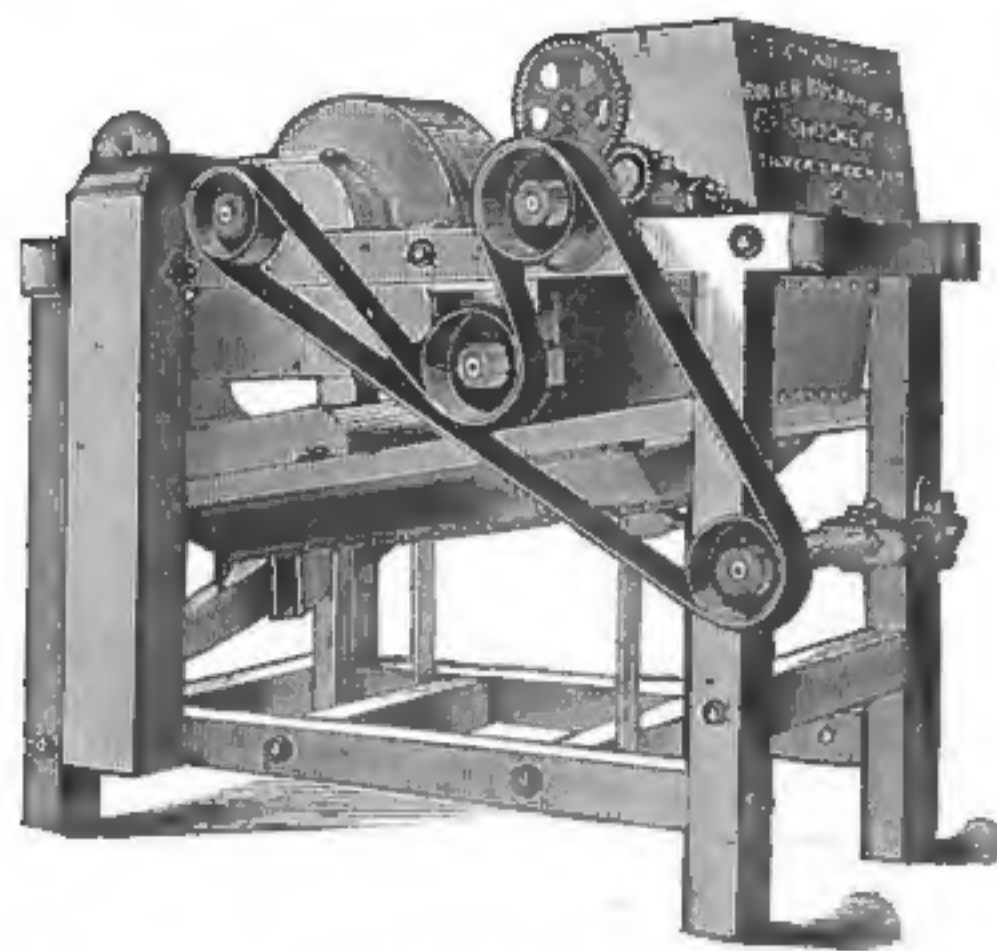
Letters Patent No. 10,493 dated June 24, 1884, original number, 265,927, to Daniel W. Marmon and Jesse Warrington, of Indianapolis, Indiana, assignors to Nordyke & Marmon Co., of same place. This invention consists in certain new and improved mechanism in that class of machinery for the reduction of grain known as "roller-mills," whereby the parting of the grinding-rolls and shutting of the feed-gates, or the bringing of said rolls in grinding relation and opening of said feed-gates, can be operated simultaneously; and, further, in mechanism so constructed that while the feed-gates may be operated simultaneously with the grinding rolls, they may also be operated independently of said rolls when desired. Referring to the accompanying drawings, Figure 1 is a top or plan view of a mill embodying the invention; Fig. 2, an end elevation of the mill without the pulleys, as seen from the dotted line *xx* in Fig. 1; Fig. 3, a detail horizontal sectional view, looking downwardly from the dotted line *yy* in Figs. 2, 4, and 5, showing the mechanism involving the invention and the parts immediately connected thereto, the top-casting, of the frame-work being removed; Fig. 4, a view of the end of the hopper and the mechanism thereon as seen from the dotted line *xx* in Figs. 1 and 6; Fig. 5, a transverse vertical sectional view of the principal portion of the mill, partly at the center and partly at one end, as is indicated by the dotted lines *ww* and *vv* in Fig. 1; and Fig. 6, a horizontal sectional view on the dotted line *uu* in Figs. 2, 4, and 5.

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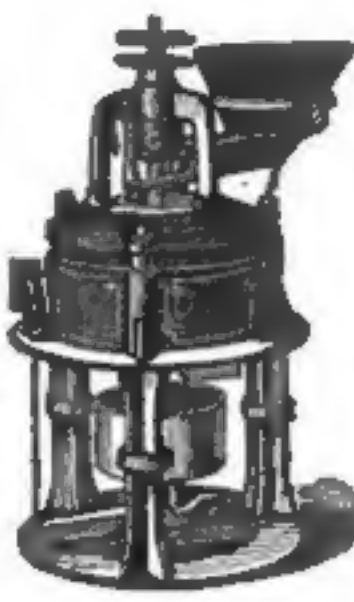
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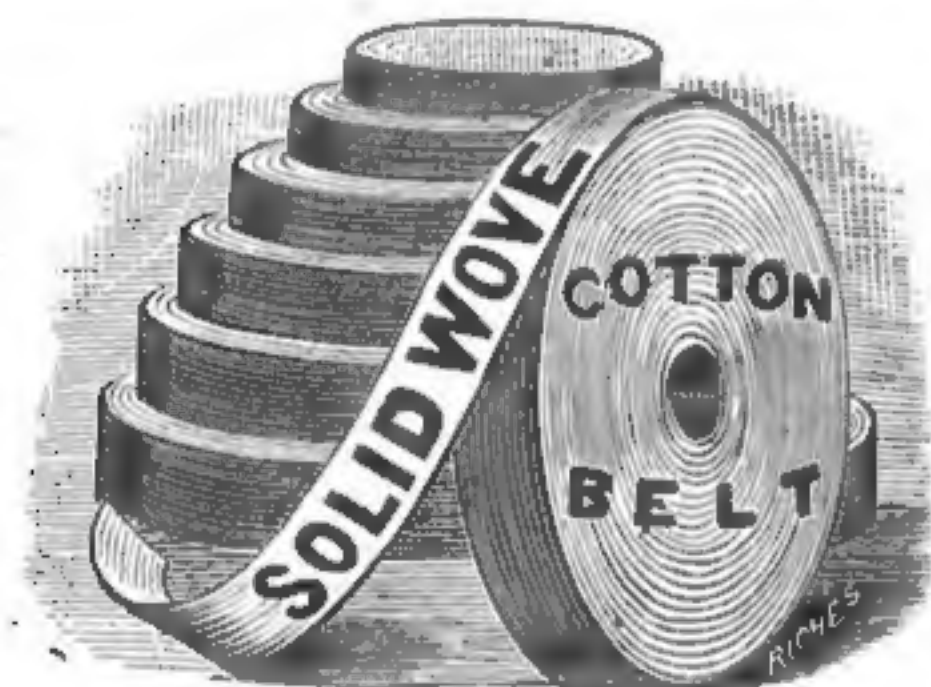
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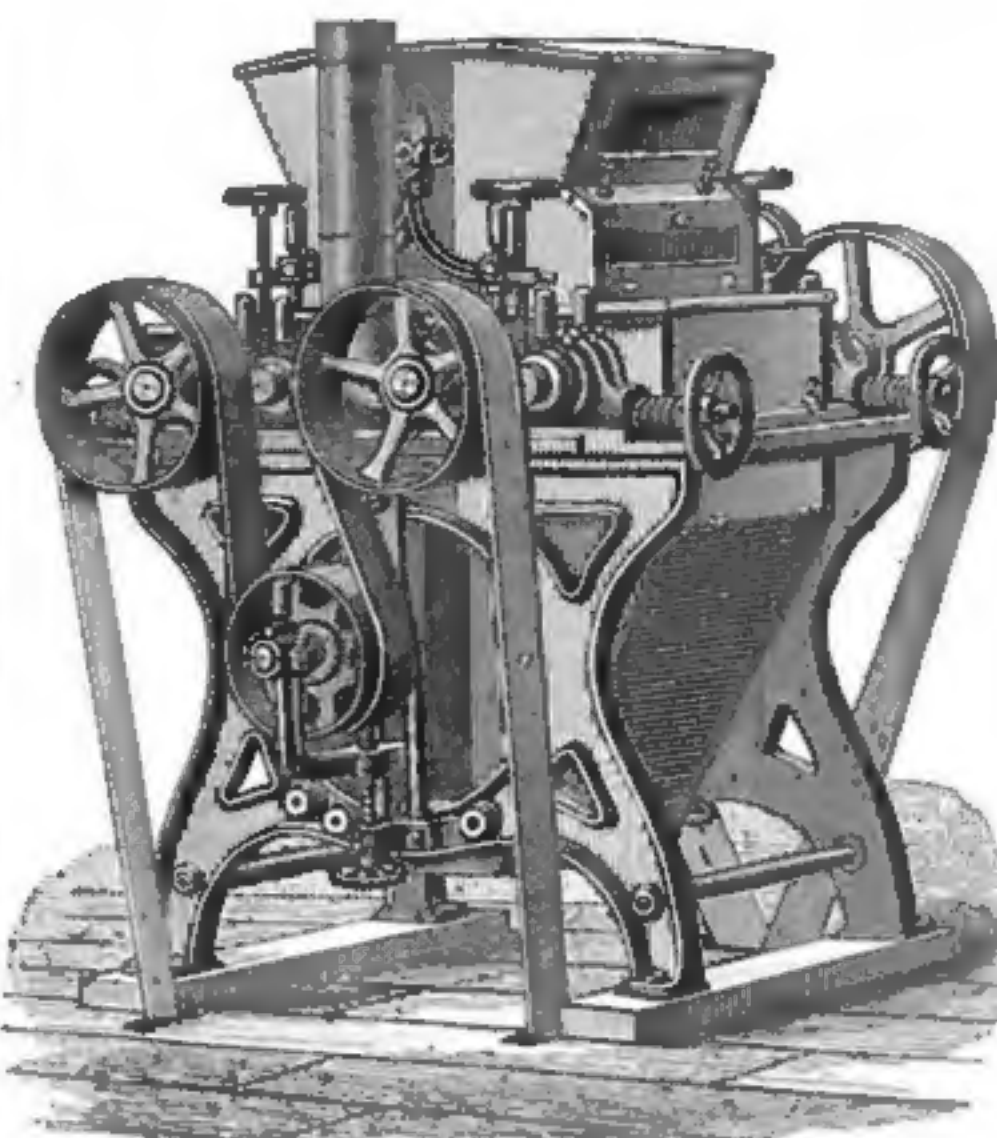
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Our six by twenty rolls weigh 175 pounds each making 700 pounds to drive in a double set roller mill, as against 1800 pounds in the old style mill; this fact enables us to run with greater speed, with no danger of hot journals, hence our greater capacity. Produces better results, because there is less Pulverizing and Better GRANULATION, the point of contact being much less on a SIX-INCH ROLL than the old system; the STOCK BEING KEPT LARGER and more middlings produced on each reduction. It is a well established fact that the object in gradual reduction milling is to make as large a percentage of middlings as possible, and we claim to make MORE MIDDINGS from a bushel of wheat THAN ANY OTHER ROLLER MILL, and we are prepared to prove our claim. The MORE MIDDINGS the greater percentage of PATENT FLOUR, and better COLOR of ALL grades. We build the only Roller Mill with **PATENT EXHAUST ATTACHMENT** for taking away all GENERATIVE HEAT, thus doing away with the GREATEST ANNOYANCE that millers have experienced in running the gradual reduction system, at the same time keeping the stock cooler as it passes to the Reels and Purifiers, consequently the separations are made more easily. We use nothing but the Ansonia Chilled Iron Roll, with steel journals, ground, and run them entirely with LONG belts. With a feed device for throwing out and in easily, with a leveling device that is positive and perfect, and an adjustment so entirely positive, that feed can be stopped or cut-off, and put on again without readjusting rollers. **WE DO NOT DEPEND UPON THE STOCK TO KEEP OUR ROLLS APART.** We are prepared to furnish plans for our Gradual Reduction system on short notice, and fill orders for our Mills promptly. We make both Corrugated and Smooth Rolls, Twelve, Fifteen, Eighteen and Twenty Inches Long and Six Inches in Diameter. Prices Sent on Application. Correspondence solicited. Address,

O. E. BROWN MANUFG. CO.

GRAND RAPIDS, MICHIGAN.

ROLLS RE-GROUND

And Re-corrugated to order. Our Machinery for this purpose is very accurate.
Can do work promptly.

Case Mfg. Co., Columbus, Ohio.

Toledo Mill Picks and Stone Tool Mfg. Co.



Manufacturer and Dresser of

MILL PICKS.

Made of the very best double-refined English cast steel. All work guaranteed. For terms and warranty, address **GEO. W. HEARTLEY, No. 297 St. Clair Street, Toledo, O.** Send for Circular.
N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

ALSO MANUFACTURERS OF
**SHAPING, PULLEYS, HANGERS COUPLING
AND MACHINE JOBBING.**

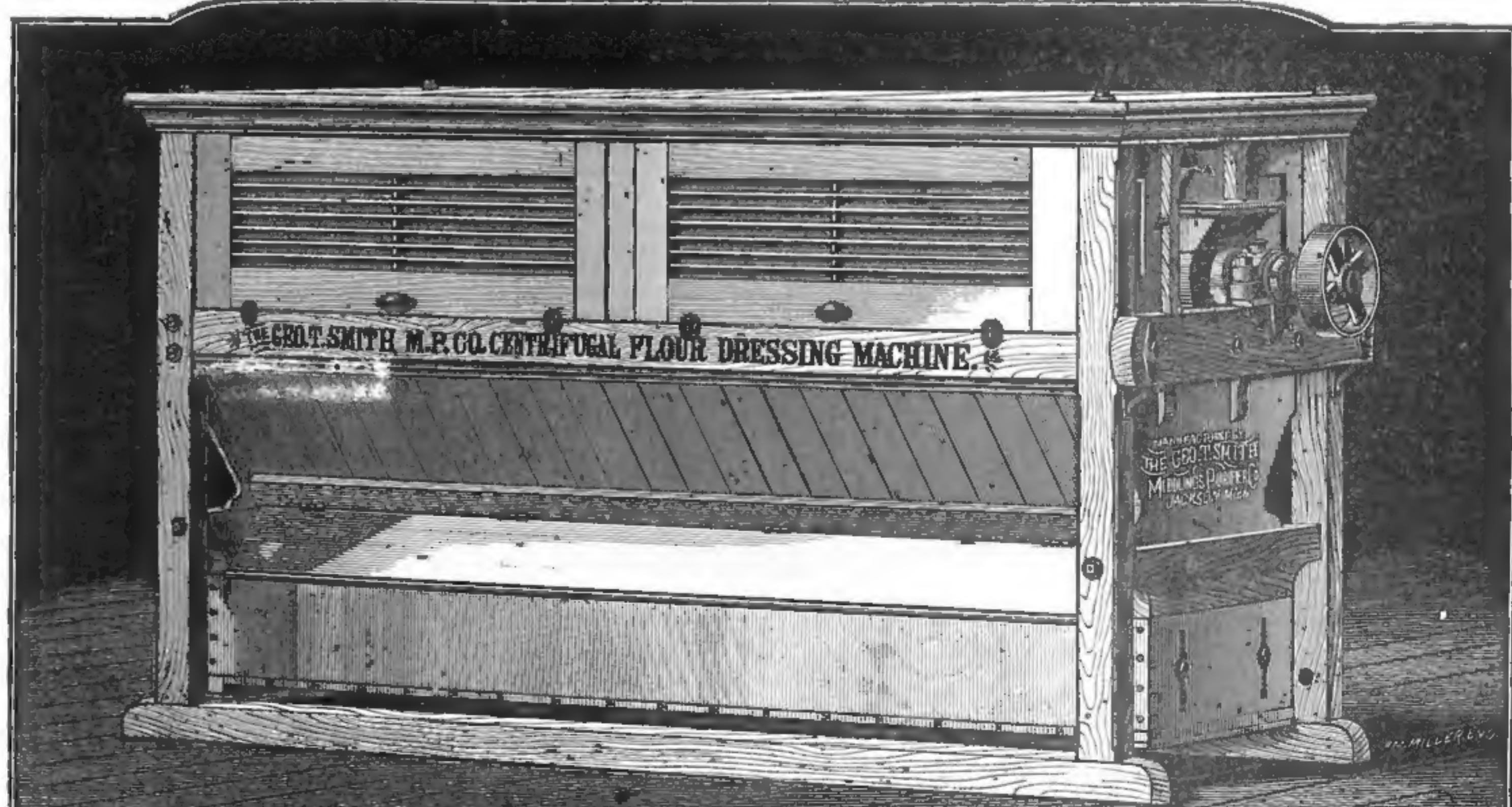
JOHN C. HIGGINS & SON,
Manufacturers and Dressers of
MILL PICKS.
168 KINZIE ST., CHICAGO.



GOLD MEDAL—SPECIAL, 1ST ORDER
OF MERIT.



Picks will be sent on 30 or 60 days' trial to any responsible Miller in the United States or Canada, and if not superior in every respect to any other pick made in this or any other country, there will be no charge, and I will pay all express charges to and from Chicago. All my picks are made of a special steel, which is manufactured expressly for me at Sheffield, England. My customers can thus be assured of a good article, and share with me the profits of direct importation. References furnished from every State and Territory in the United States and Canada. Send for Circular and Price List.



FOR CIRCULARS AND PRICE LISTS ADDRESS
THE GEO. T. SMITH MIDDINGS PURIFIER CO.
JACKSON, MICHIGAN, U. S. A.

SCIENTIFIC AND MECHANICAL

ADHESIVE POWER OF NAILS AND SCREWS.

THE extensive use to which nails and screws are put in construction lends considerable interest to any records of experience tending to discover their holding power. Haupt, in his "Military Bridges," gives a table of the holding power of wrought iron 10d. nails, 77 to the pound, and about 3 inches long. The nails were driven through a one inch board into a block, the board was then dragged in a direction perpendicular to the length of the nails. Taking a pine plank nailed to a pine block with eight nails to the square foot, the average breaking weight per nail was found to be 380 pounds. Similar experiments with oak showed the breaking weight to be 415 pounds. With twelve nails to the foot square the holding power was 542½ pounds, and with six nails in pine 463½ pounds. The highest results obtained were for twelve nails to the square foot in pine, the breaking weight being in this case 612 pounds per nail. The average strength decreases with the increase of surface. Tredgold gives the force in pounds required to extract 3d. brads from dry Christiana deal at right angles to the grain of the wood as 68 pounds. The force required to draw a wrought-iron 6d. nail was 187 pounds, the length forced into the wood being one inch. The relative adhesion when driven transversely and longitudinally is, in deal, about two to one. To extract a common 6d. nail from a depth of one inch in dry beech, across grain, required 167 pounds; in dry Christiana deal, across grain, 187 pounds, and with grain, 87 pounds. In elm the force required was 327 pounds across grain, and 257 with grain. In oak the figure given was 507 pounds across grain. From further experiments it would appear that the holding power of spike nails in fir is from 460 to 730 pounds per inch in length, while the adhesive power of screws, 2 inches long, 0.22 inch in diameter at the exterior of the threads, twelve to the inch, driven into ½ inch boards, was 790 pounds in hard wood and about one half that amount in soft wood.

* * We herewith annex a few of the numerous impositions that the American masses are compelled to wrestle with, as compiled by an exchange: Bob veal; suttine, butterine, oleomargarine; cottonseed oil butter; peanut oil butter; mustard adulterated with naphthal yellow, an irritant poison; teas stained and colored with poisons and polished with a coating of lead; coffee beans dyed and coated with arsenic; skim milk, watered milk; sugar three-fourths terra alba; candy made of fusel oil; honey made of chemicals; ice cream made of scented and frozen gelatine; wines from France and Germany made in chemical mixing shops in Weehawken, guiltless entirely of fruity quality; fancy drink compounded of myrrh, absinthe, logwood, fusel oil, almonds, aloes, cochineal, acids, alkalies, arsenic, and other mineral and vegetable poisons; vinegar that is simply a corrosive acid; fancy Swiss, French, English and German cheese made from lard and other uncheesy substances in New Jersey; olive oil taken from Louisiana and Mississippi cottonseed, and from Virginia and North Carolina peanuts. These are a few of the most interesting complex problems with which the American civilized stomach must wrestle daily. Is it any wonder that dyspepsia, consumption, and countless other diseases rage among us?

* * Probably every man who owns or at any time has run a boiler, says *The Locomotive*, has experienced a vast deal

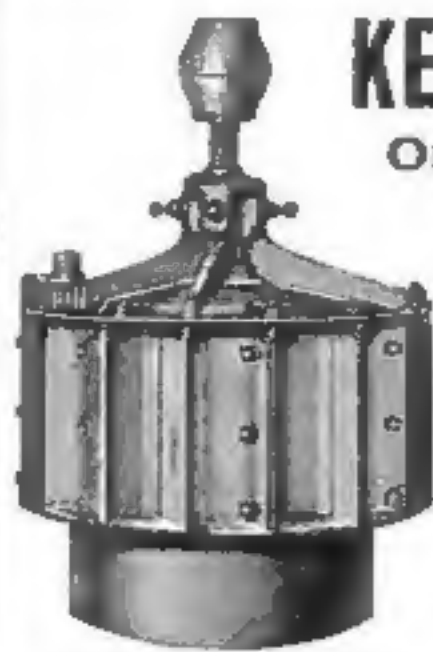
of trouble with the cast iron mouth-pieces around the furnace-doors. These pieces invariably warp, crack, and burn out in a short time, and the fire-brick lining falls down, the cast-iron front becomes burned, and where the boilers are set with the flush front setting, the portion of the shell which projects beyond the front tube-sheet gets overheated, which generally results in its fracture, and in many cases the longitudinal seam where the head is attached to the shell is so severely strained that it begins to leak, and sometimes this leakage is very difficult to stop, owing to the joint being permanently strained. This warping and burning away of these castings may be prevented by simply slitting them back from the edge for about one-half their depth. The slots should be from one-half to three-fourths of an inch in width, and may be from eight to twelve inches apart over the furnace door. This width is necessary as they close up gradually under the influence of the intense furnace heat.

* * The controversy as to the greater suitability of iron or of steel for crank shafts grows. An important contribution to it was afforded at the meeting of the Iron and Steel Institute. Mr. W. Putnam, of the Darlington Forge, made an announcement that surprised many. It was that during the last two years his firm has made large wrought iron cranks for several of the most important steelmakers. In some cases these iron cranks were to replace others which had been made of steel. If any persons were more interested in steel than others, it ought surely to be those who had got most of it, such as the Messrs. Siemens. Yet, even the telegraph steamer, *Faraday*, which was originally fitted out with steel shafts, had during the last six weeks been divested of them, and his firm had made iron shafts to replace them! Here, indeed, is a case of the physician declining his own remedy. It is clear that there is still much need for further progress by the makers of steel forgings in the all-important matter of uniformity of quality.

* * *The Locomotive* says, among the various things which are calculated to shake one's faith in human nature, are the statements put forth by the makers of various feed-water heaters that, by means of their heaters an unlimited amount of cold water may be raised to a temperature far above 212 degrees Fah., by exhaust steam from an engine without causing back pressure on the piston. The statement is, of course, simply absurd, but as many who use engines may have so limited a knowledge of steam that they do not know how hot a good heater should deliver its water, we would say that the temperature of exhaust steam at the atmospheric pressure is 212 degrees and no more, that water cannot possibly be heated above this point with its use, and that from 200 to 210 degrees are good results. Where higher temperatures are claimed to have been attained by the use of exhaust steam it is morally certain there was back pressure to a corresponding extent on the engine piston, or—the heater-man lied.

* * An English journal gives credit to Americans for at least fifteen inventions and discoveries, which, it says, have been adopted all over the world. 1st, the cotton-gin; 2d, the planing machine; 3rd, the mower and reaper; 4th, the rotary printing press; 5th, navigation by steam; 6th, the hot air or calorific engine; 7th, the sewing machine; 8th, the India rubber (vulcanite process) industry; 9th, the machine manufacture of horse-shoes; 10th, the sand blast for carving; 11th, the gauge lathe; 12th, the grain elevator; 13th, artificial ice manufacture on a large scale; 14th, the electro-magnet and its practical application; 15th, the composing machine for printers.

* * It is now proposed to use glass-rimmed carrier pulleys for the cable on cable roads, the claim being that the cable will be injured much less than where iron-rimmed wheels are used. It is also proposed to make the bearings of the pulleys of glass.



KEISER TURBINE

Only Best Wheel Built.

Examine its construction and be convinced. The only wheel that really distributes and applies the water correctly and scientifically at all stages of gate, and at the same time closes water-tight and has an easy working, balanced, gate. Tell us about your water power.

KEISER-MACHINE CO.
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Improved Success Percentage.

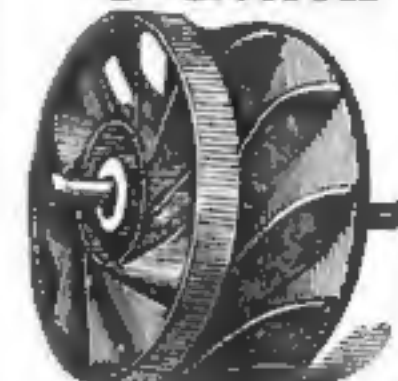
Full Gate.....86.29
¾ Gate.....86.07
½ Gate.....81.90

This Wheel is Durable and Cheap.

Send for Pamphlet to
S. MORGAN SMITH,
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DeLoach Water Wheels



From 2-10 to 2,000 horse power. Simplest, most durable, best gate for holding the water, fully equal in percentage of power to any wheel made, and price places it in reach of all. Send for illustrated catalogue A. A. DeLoach & Bro., Manufacturers, also of Milling Machinery, Atlanta, Ga. * * * Mention this paper.

Send for Catalogue and Prices.



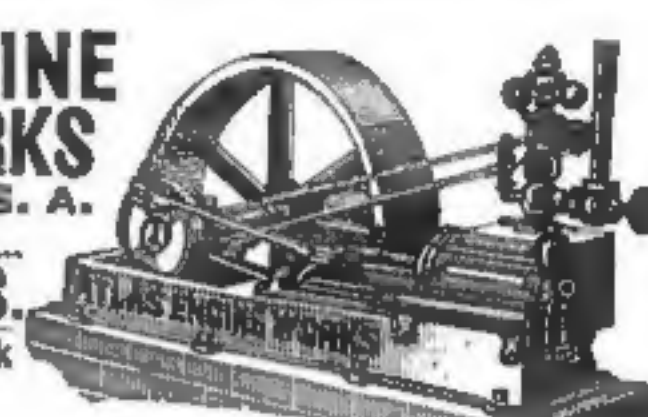
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INDIANAPOLIS, IND., U. S. A.

MANUFACTURERS OF

STEAM ENGINES & BOILERS.

Carry Engines and Boilers in Stock for immediate delivery.



POOLE & HUNT'S LEFFEL TURBINE WATER WHEEL

Made of Best Materials, and in the Best Style of Workmanship.

MACHINE-MOLDED MILL GEARING

From 1 to 30 feet diameter, of any desired face or pitch, moulded by our own Special Machinery.

SHAFTING, PULLEYS AND HANGERS

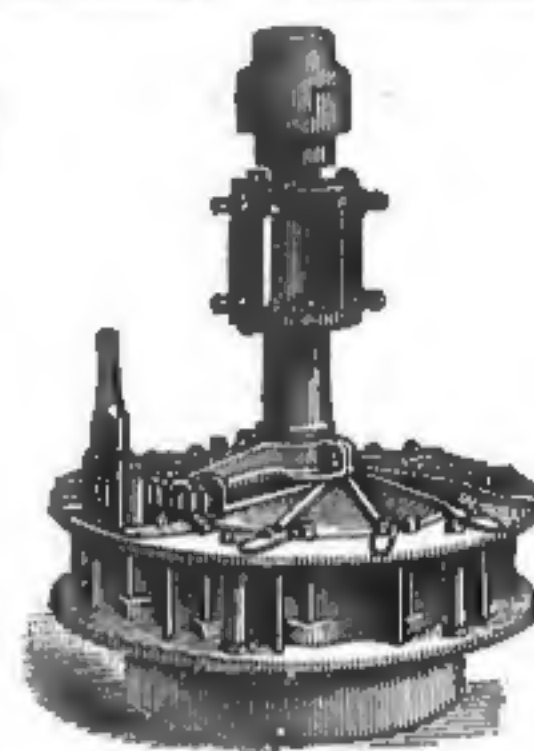
Of the Latest and Most Improved Designs.

Engines, Boilers,

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Special Attention given to Heavy Gearing. Shipping Facilities the Best in All Directions.

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For Water Wheels

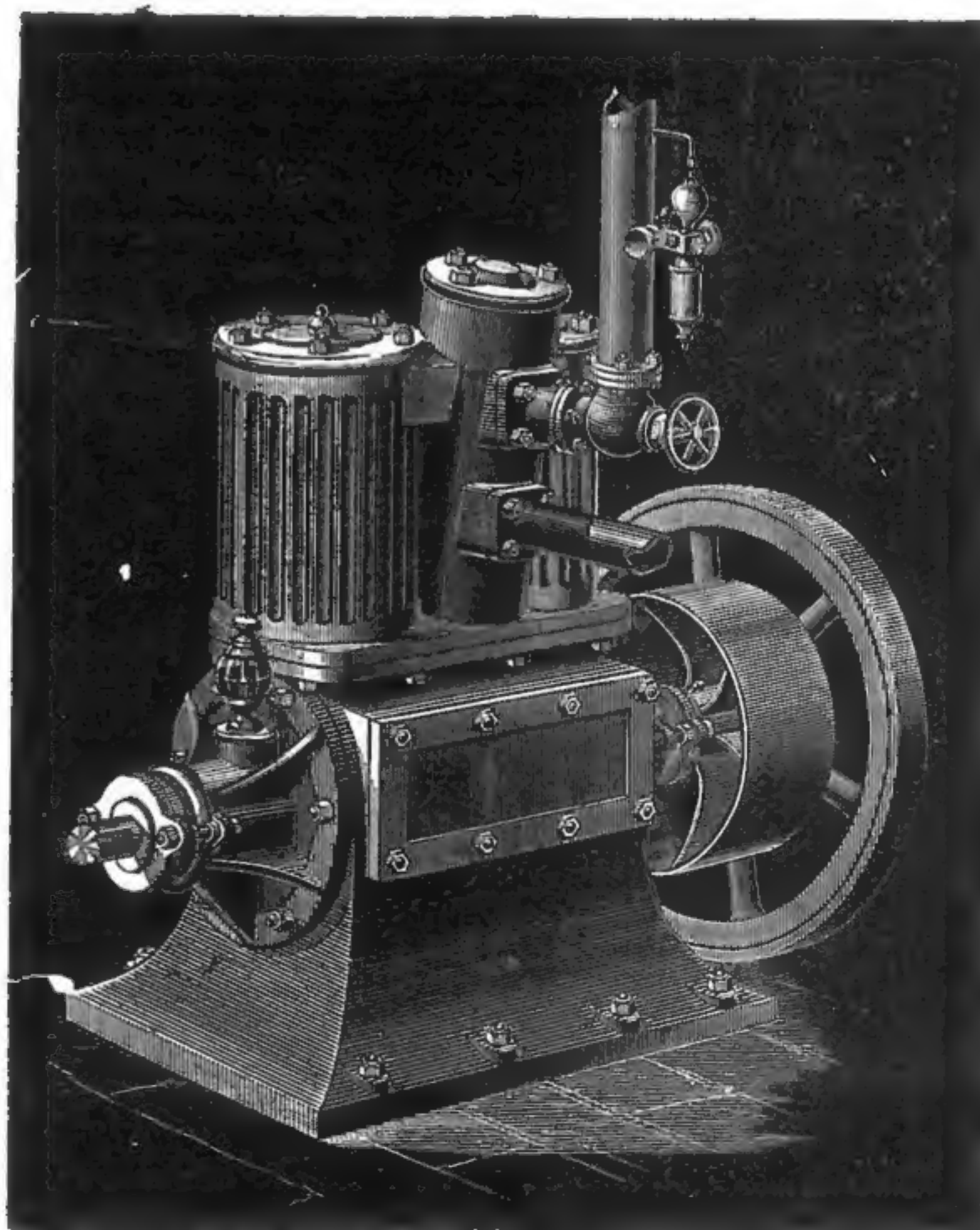
Cohoes Iron Foundry & Mch. Co.
Send for Catalogue. Cohoes, N. Y.

The Westinghouse Automatic Engine

REAR VIEW, WITH ONE FLY WHEEL REMOVED.

Over 600 Engines Now in Use.

Average Sales, 1600 H. P. Per Month.



Send for Illustrated Circular and Reference List, and State the Horse Power Required.

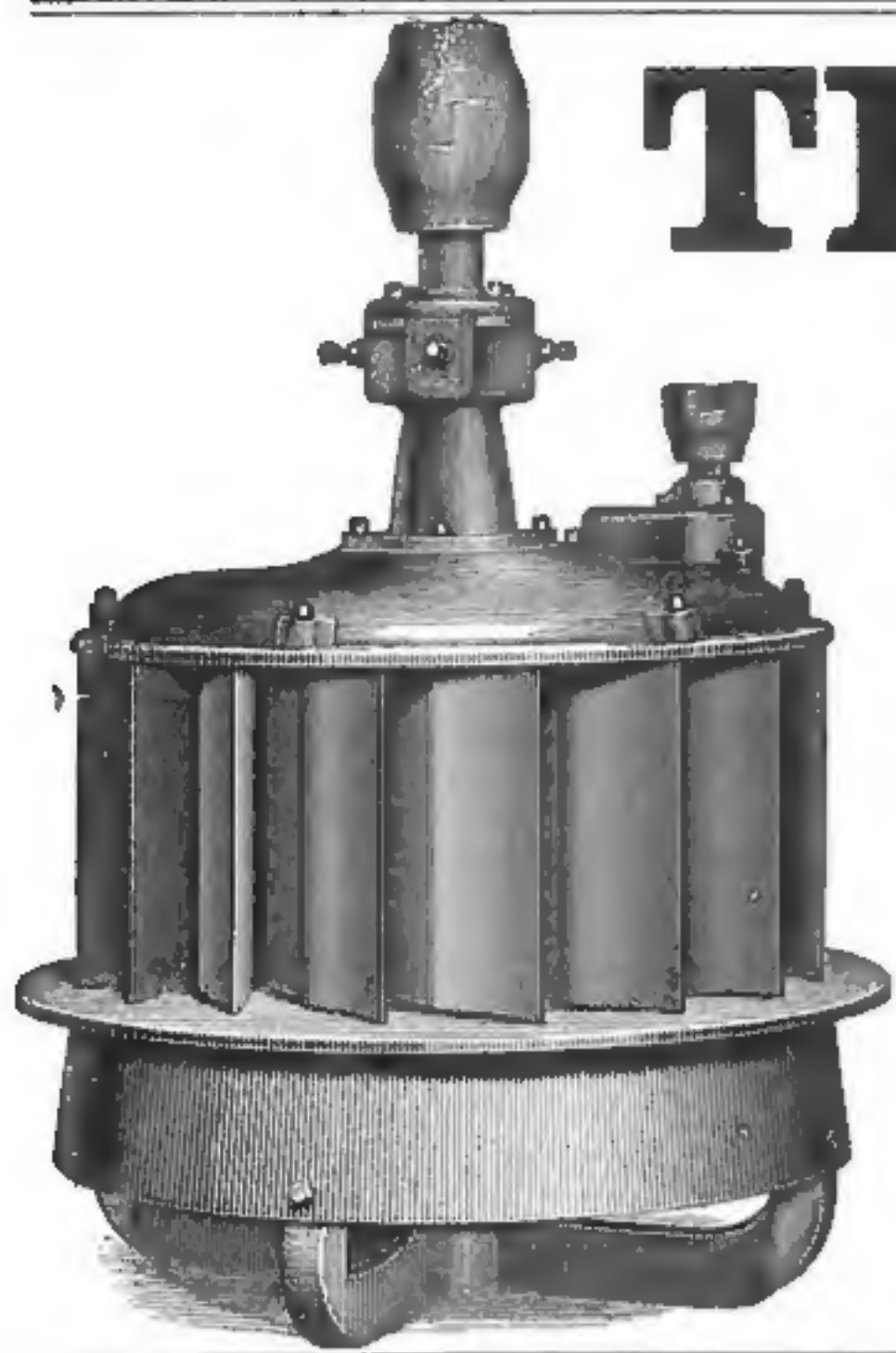
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Address if More Convenient } 94 Liberty Street, New York.
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Our Engines are largely used in Burr and Roller Mills, both as the Sae Power, and as a Relay to Deficient Water Power. Especially adapted to Coupling Direct to the Jack-Shafts, or to Special Machinery.



THE VICTOR TURBINE

Possesses more than Double the Capacity of other Water Wheels of same diameter, and has produced the Best Results on Record, as Shown in the Following Tests at Holyoke Testing Flume:

| Size Wheel. | Head in Ft. | Horse Power. | Per Cent Useful Effect |
|-------------|-------------|--------------|------------------------|
| 15-inch. | 18.06 | 30.17 | .8932 |
| 17½ in. | 17.96 | 36.35 | .8930 |
| 20-inch. | 18.21 | 49.00 | .8532 |
| 25-inch. | 17.90 | 68.62 | .8584 |
| 30-inch. | 11.65 | 52.54 | .8676 |

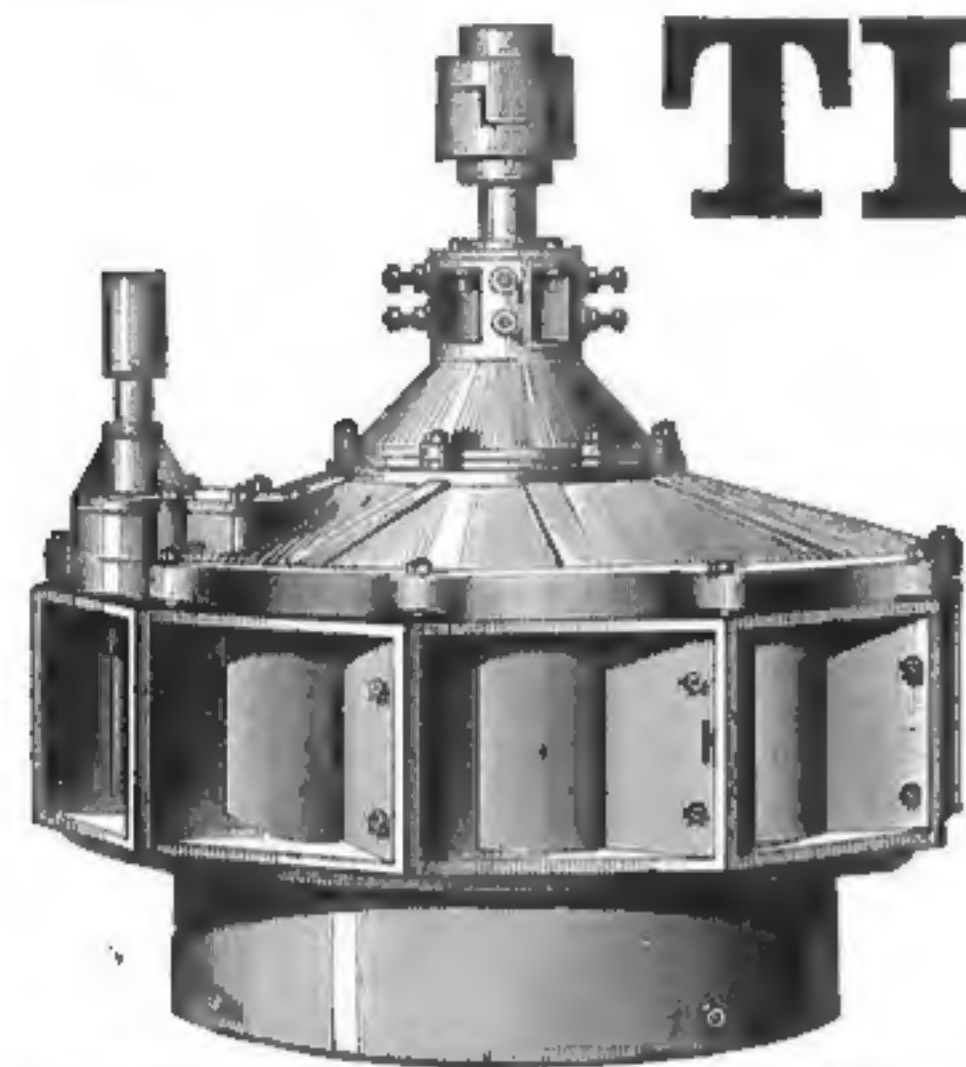
WITH PROPORTIONATELY HIGH EFFICIENCY AT PART-GATE.

Such results, together with its nicely-working gate, and simple, strong and durable construction, should favorably commend it to the attention of ALL discriminating purchasers. These Wheels are of very Superior Workmanship and Finish, and of the Best Material. We also continue to manufacture and sell at very low prices the

ECLIPSE DOUBLE TURBINE,

So long and favorably known. State your requirements, and send for Catalogue to the

STILWELL & BIERCE MANUFACTURING CO.,
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THE EUREKA TURBINE

Celebrated as the Best Part-Gate Wheel Ever Built.

Absolutely Unequalled in Efficiency, as Shown by The Accompanying Table.

WE PUBLISH OUR PART-GATE FIGURES.

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No Other Turbine Ever Approached the Above Percentages at Part-Gate. For Catalogue and Information Address,

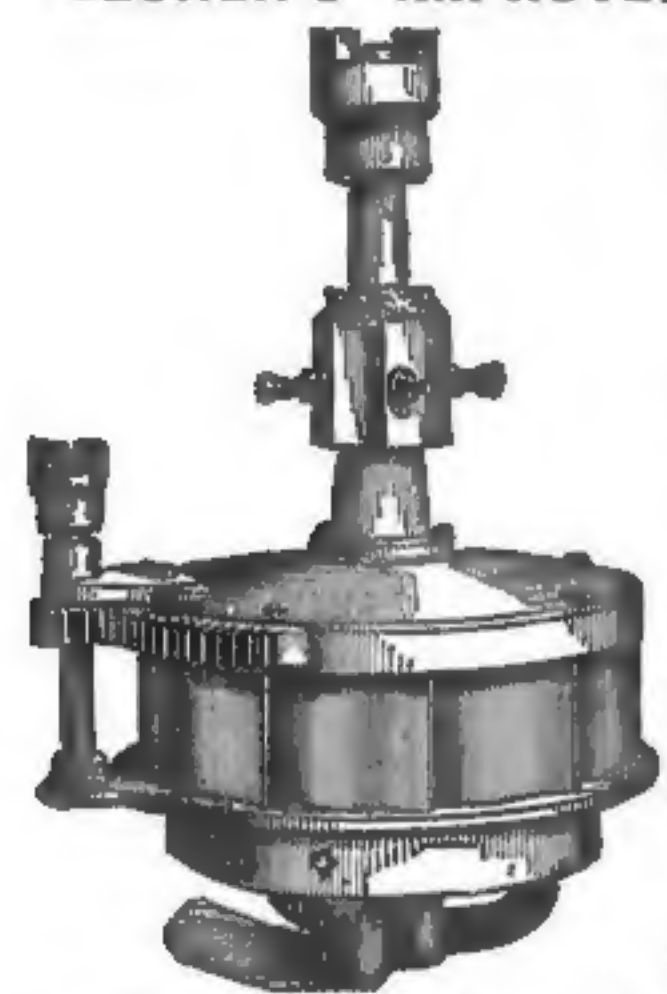
W. H. BARBER & CO., ENGINEERS AND MACHINISTS, ALLENTOWN, PA., U. S. A.

From the Records of Actual Tests at the Holyoke, Mass., Testing Flume:

PERCENTAGE OF EFFICIENCY.

| | Full Gate. | ¾ Water. | ½ Water. | ¼ Water. |
|----------------|------------|----------|----------|----------|
| 24 Inch Wheel. | .8436 | .8416 | .8208 | .8002 |
| 24 Inch Wheel. | .8806 | .7910 | .7700 | .7008 |
| 24 Inch Wheel. | .8078 | .7578 | .7275 | .6706 |
| 30 Inch Wheel. | .8000 | .8011 | .7814 | .6860 |

LESNER'S IMPROVED TURBINE.



Simple,
Durable,
Strong.
Gate Works
EASILY
—AND—
RAPIDLY.
PERFECT
Satisfaction
—IS—
GUARANTEED.

W. B. WEMPLE'S SONS, FULTONVILLE, N. Y.

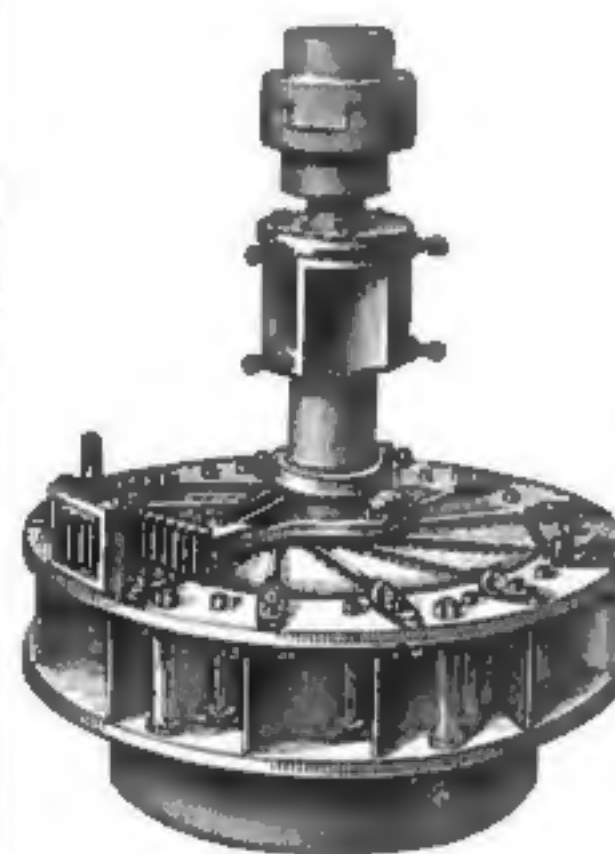
LEFFEL'S WATER WHEEL

MADE BY JAMES LEFFEL & CO.

The "OLD RELIABLE"

with improvements, making it the

**MOST PERFECT TURBINE
NOW IN USE.**



Comprising the Largest and the Smallest Wheels, under both the Highest and Lowest Heads used in this Country. Our new Illustrated Book sent free to those owning water power.

Those improving water power should not fail to write us for New Prices before buying elsewhere. New Shops and New Machinery are provided for making this wheel. Address

JAMES LEFFEL & CO., SPRINGFIELD, OHIO, AND 110 LIBERTY STREET, N. Y. CITY.

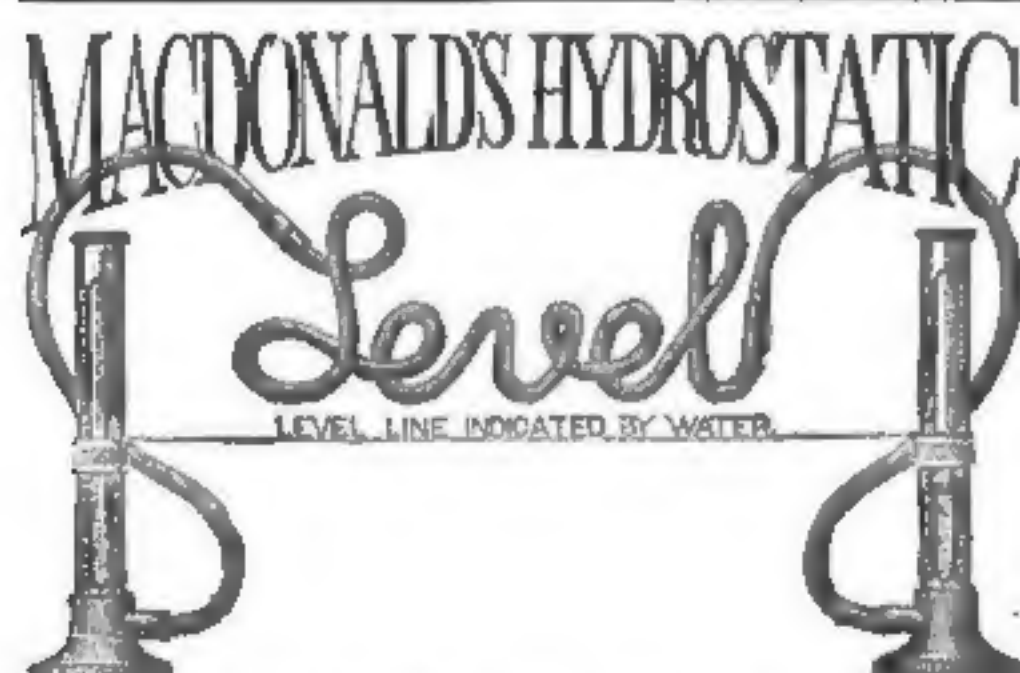


This Wheel gives high results, and is acknowledged the best, most practical and efficient Turbine made. For Simplicity, Durability, and Tightness of Gate it has no equal.

State requirements and send for Catalogue to

T. C. ALCOTT & SON,
MOUNT HOLLY, N. J.

PLEASE mention THE MILLING WORLD when you write to advertisers. It will pay you to do this.



For leveling shafting it is invaluable. Applied to any two points regardless of distance and obstructions that may be between. Send for circular.

Jas. Macdonald, 55 Broadway, New York.

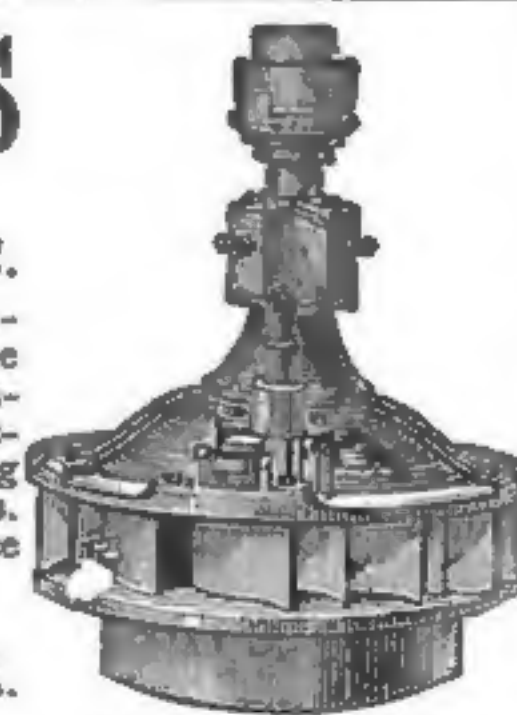
BURNHAM'S IMPROVED Standard Turbine

IS THE Best constructed and finished, gives better Percentage, more Power, and is sold for less money, per horse power, than any other Turbine in the world. New Pamphlet sent free by

Burnham Bros., York, Pa.

MERCER'S RELIABLE Turbine Water Wheel.

This wheel is acknowledged one of the best on the market. Has valuable improvements in the construction which is commanding the attention of buyers. Send for catalogue and price list. T. B. MERCER, West Chester, Pa.



EVIDENCE.

CASE MFG. CO., COLUMBUS, OHIO.

DETROIT, MICH., May 10, 1884.

GENTLEMEN: I inclose a draft on New York in payment of balance due you on contract; and in reply to your inquiry as to how our Roller Mill is doing, I am happy to say that the whole equipment is working splendidly, and to our entire satisfaction. Our granulations are simply perfection, and we regard your feed on Rolls and Purifiers as the ne plus ultra. Our location is central in the city of Detroit, and you may, with the utmost confidence, invite parties interested to call and see what we are doing. Our flour stands second to none in the city or state, and our clean-up is equal to any in the state.

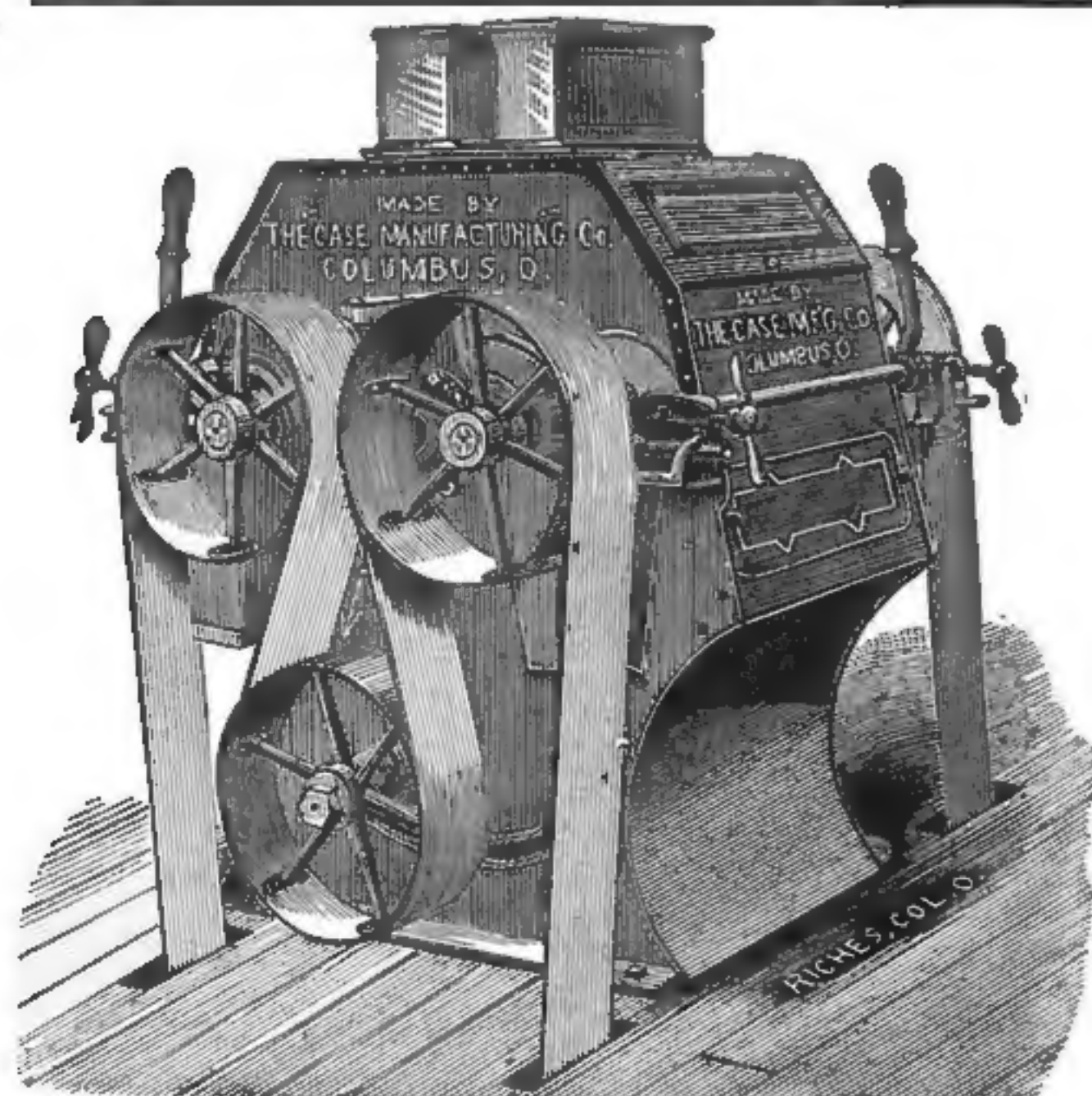
Yours truly,

JOHN CLEE.

WE CAN DO AS WELL FOR YOU AS WE HAVE FOR OTHERS. WRITE US BEFORE PLACING YOUR ORDER.

CASE MANUFACTURING CO.

COLUMBUS OHIO.



"BISMARCK."



TWO KENTUCKY MILLS.

THE PARIS ROLLER MILLS, PARIS, KY.

From the Lexington, Ky., *Press*, we take the following in reference to the Paris Roller Mills, owned by William Shaw, and located at Paris, in Bourbon county, Kentucky. The mills are situated in the suburbs of Paris, on a never-failing stream of water. The building is six stories high, and is one of the most substantial buildings in the State. Some of the stories are nineteen feet from the floor to the ceiling.

Mr. Shaw is said to have written the following description of his establishment: Right to the front with one of the best mills in America, and decidedly the best in Kentucky. Now, that may seem a very bold assertion, and the general public will naturally say: "Come, Billy Shaw, we want facts to sustain the assertion. Very well, here they are: The United States is, beyond question, the leading nation of the world in the manufacture of mill and agricultural machinery, especially so in mill machinery, and Minneapolis, is the leading city in the United States for magnificent mills and machinery, which the world cannot beat, and the lamented Gov. Washburn, now deceased, was the grand pioneer in developing and bringing to perfection this new process of gradual reduction by roller machinery. Very well, Messrs. Odell & McKee, connected with the celebrated manufacturers of mill and other machinery of Stilwell & Bierce Mfg. Co., of Dayton, Ohio, were, for many years, pioneers with Gov. Washburn in bringing to perfection this Hungarian process of milling, and as theoretic and practical workmen in construction of mills and milling machinery cannot be excelled. As proof, let me refer to the celebrity of the Odell roller machinery, which has and is gaining world-wide fame. Only the past winter they shipped to Cork, Ireland, the Odell roller machinery for a 300-barrel mill for John Shaw & Son, of before named city, and about the 1st of past February they sent a corps of workmen to erect this mill. Whilst I had been in the millstone milling some thirty years, at my age of life (three score and ten), I hesitated a long while about making this great change, but finally decided I would. However, prior to doing so, I made a trip to Maysville to see an Odell roller mill just built by Messrs. Robinson & Co., and found it giving good satisfaction and running well. I then made a trip to Ohio, to look at some of the best mills. I again made another trip to Ohio, accompanied by Mr. M. A. Craft, of Miami, Ohio, and we took in, in our trip, some of the very best mills in the State of Ohio, and got the views of the best millers and mill owners in the State in regard to the most popular and best roller machinery.

"So after being around amongst the millers and mill owners, I finally decided on the Odell roller system. I entered into contract with the manufacturers, Stilwell & Bierce Mfg. Co., for two Victor turbine water wheels of 95 horse-power, and the Odell roller machinery for a 150 barrel per day mill. Then they furnished me with the following machinery from other parties: 2 six-reel bolting chests and 10 reel scalpers, from Lima, Ohio; 5 of Geo. T. Smith's No. 1 purifiers, from Jackson, Michigan; 1 Becker brush smutter, from Rock Falls, Ill.; 1 Beardslee scourer, from Milwaukee; 2 dust collectors, from Milwaukee; one bran duster, from Lockport, N. Y.; 1 six magnet separator, two Eureka smutters, from Howes & Ewell, of Silver Creek, N. Y.; one centrifugal reel, from Dayton. All this machinery is tip-top, first-class, and can not be excelled. Mr. Craft was chief foreman and boss in erection of this magnificent mill, together with a corps of first-class workmen under my supervision. Mr. Craft and his workmen may well feel proud of their workmanship, for it is, without exception, the best planned and best arranged machinery and building I ever saw, and I think I should be a good judge in such matters, as I have been engaged in cotton and woolen mills, saw and flouring mills, since my 15th year, and the study of machinery of various kinds has been the great hobby of my life. This new mill moves off like a thing of life, in most beautiful and clock-like order, and we are manufacturing flour of various brands that cannot be excelled in quality; manufactured by complete roller process; no mill stones; no half-way bungling process like some mills who ship to Paris and bolster up by balderdash advertisements. We have a large warehouse contiguous to mill with 20 horse-power engine operating a large Kruth cockle separator, and a large Eureka smutter,

capable of cleaning in perfect order, 1,500 to 2,000 bushels of wheat per day. It then passes over to the mill and again passes through the before mentioned machinery and is cleaned again."

The mills were built at a cost of from \$30,000 to \$40,000, and are complete in every respect. Mr. Shaw has advantage of both steam and water power, although for more than half the year he is not at the expense of running an engine. The following are some of the brands manufactured by him: Pride of Paris, Parisian Fancy, Royal, Plain Family, Fountain. The mills ship largely to all the large Eastern, Western, and Southern cities, and the flour is exceedingly popular in Lexington, and the demand is daily increasing.

THE BANNER ROLLER MILLS, OF SHELBYVILLE, KY.

These mills, Logan & Logan, proprietors, situated on East Main street, near the Frankfort bridge, across Clear creek, are substantially built of brick and stone, are 40 feet wide by 70 feet long, and four stories high, and are thus described by the *Shelby Sentinel*. The boiler and engine room is at the rear of main building, and lessens the risk from fire. The steam is supplied by two tubular boilers. The engine is a powerful one, built by Webster & Pitt, of New Albany. The shafting and gearing in the basement runs as easy and smooth as a clock, and shows that a mechanic put it up.

On the first or roller floor are the flour and wheat scales, three flour packers, twelve sets of Edw. P. Allis & Co.'s rolls, five sets of breaks, five smooth and two scratch rolls, twenty-five elevators, several conveyors, and bins for flour. On the second or bolting floor are fifteen bolting reels, two Martin centrifugal flour dressing machines, bins for wheat, flour, and bran. On the third or purifying floor are three Geo. T. Smith purifiers, three Prinz dust collectors, one wheat separator, one Victor double brush, one Eureka smutter, and many other machines not necessary to mention. There is a great deal of machinery, but it is so well arranged on each floor, that every part of the mill is of easy access. A lady can go through any part of the mill without danger of getting her dress caught in the machinery. The mill is kept as clean as a parlor. The wood work of the first floor is of hard pine, varnished.

The wheat after being thoroughly cleaned, passes through the first break machine, thence the bran passes off to a bin for it, and the flour and middlings pass to a bolting reel, and are separated and graded, the middlings passing to the purifiers and thence to the rolls to be crushed into flour that contrasts with snow, as a Bluegrass beauty with a Hottentot. The capacity of these mills is 100 barrels per day, and Messrs. Logan & Logan are now shipping wheat from Louisville, and running night and day to supply the demands for their flour. This mill, which is now the most complete roller mill of the State, was fitted up by the Richmond City Mill Works, of Richmond, Ind., and in the manner in which machinery runs is any test, Mr. Schoyer, the foreman who had the work in charge, and his assistants, are certainly master mechanics.

The bolting programme was arranged by Mr. J. D. Mayhood, expert miller for the above works, and so accurately was it all arranged, that not a change had to be made when the mill was started up. Any one who delights in machinery will be paid for their trouble by a visit to the mill.

Notes from the Mills.

Jos. Dilworth will erect a 30,000 bushel elevator at Moorhead, Minn.

A 30,000 bushel elevator will be built at Herman, Minn., by the farmers.

A tannery and grist mill was burned at Bowmansville, N. Y., last week. Loss, \$18,000.

E. P. Allis & Co., have furnished the Lanier Mill Co., Nashville, Tenn., a Gray's noiseless belt roller mill.

The harvesting, threshing and grinding of new wheat is now in full progress in the lower Southern States.

Beckley & Phipps, Grove City, Minn., have bought of E. P. Allis & Co., a Gray's noiseless belt roller mill.

By the forming of a millers' association the price of flour has been raised 50 cents per 100 pounds in Deadwood.

Chas. Hopt, Hamburg, Iowa, has put in a Gray's noiseless belt roller mill, furnished by the builders E. P. Allis & Co.

J. D. Edy, Weaver Station, Minn., has brought of E. P. Allis & Co., four pairs of Allis rolls in Gray's noiseless belt frames.

A crew of millwrights are busily engaged overhauling the flour mill at Jarrett, Minn., putting in rolls, improved machinery, etc.

Jno. Ream, Hagerstown, Md., has brought four pairs of Allis rolls in Gray's noiseless belt frames.

Work has been commenced on a 30,000 bushel elevator at Glyndon, Minn., by the Farmers' Union Elevator company, to be finished within thirty days.

The Anoka Union says that S. H. Baker, of Minneapolis, has purchased the Friedly water power and will at once build a \$10,000 flouring mill there.

Willford & Northway, Minneapolis, Minn., are to be furnished eight pairs of Allis rolls in Gray's noiseless belt frames, for Iver Pederson, Galesville, Wis.

The Richmond City Mill Works, of Richmond, Ind., have the contract for a first-class custom mill now being erected by David Putnam, at German, Darke county, Ohio.

The Singer Iron & Machine Works, St. Louis, Mo., have ordered from the Case Mfg. Co., Columbus, O., one "Little Giant" break machine to be shipped to Peter Yost, Baldwin, Ill.

The Case Mfg. Co., Columbus, O., have an order from W. W. Bush, Bull City, Kan., for one 3-roll break machine, three pairs of rolls, one scalping reel and one No. 1 double purifier.

The steam flouring mill of Hamilton & Son, at Paris, Texas, was destroyed by fire July 5, together with several dwellings and a large quantity of lumber. Loss, \$20,000; insurance, \$2,500.

B. S. Bennett, of Eureka, Kan., is building a gradual reduction roller mill of 125 barrels capacity. The Richmond City Mill Works, of Richmond, Ind., have the contract for the outfit.

Wm. Cannon, of Philadelphia, Tenn., is improving his mill by the addition of a middlings run, purifiers, packers, &c. The Richmond City Mill Works, of Richmond, Ind., have the contract.

Nickerson & Collister, Pentwater, Mich., have bought of E. P. Allis & Co., the machinery for complete one hundred bbl. all roller mill, including twelve pair Allis rolls in Gray's noiseless belt frames.

B. S. Edwards & Co., of Chetopa, Kan., are erecting a first-class gradual reduction mill. The Richmond City Mill Works, of Richmond, Ind., have the contract for the machinery and furnish the plans.

Thomas Robinson & Sons, Rochdale, England, have lately given an order to the Case Mfg. Co., Columbus, O., for two pairs 9x24 rolls in "Bismarck" frames, and to be supplied with patent automatic feed.

V. Y. Wieser, Otterville, Ia., has contracted with E. P. Allis & Co., for eight pairs of Allis rolls in Gray's noiseless belt frames, with necessary special machinery to go with them to put his mill on the roller system.

The Akron Milling Co., Akron, Ohio, have ordered twenty six pairs of Allis rolls in Gray's noiseless belt frames, and all machinery necessary for their new oatmeal and rye mill, from E. P. Allis & Co., Milwaukee, Wis.

W. H. Ennis & Son, Jacksonville, Ill., have ordered from the Case Mfg. Co., Columbus, O., one "Little Giant" break machine and scalpers making three separations, two pairs of rolls and one improved "Case" centrifugal reel.

The elevator at Devil's Lake, Dak., has reached a point of seventy-three feet in mid-air, and the roof is now being put on. It is of the 50,000 bushel class, but if the present favorable weather continues it will be none too large for the crop.

At Canandaigua, N. Y., July 4, a fire broke out at the flouring mill on the south side of the New York Central tracks. This property was supposed to belong to Mrs. A. Pomeroy, and it had been unoccupied for some time; for that reason a belief in incendiary origin prevails. The loss is estimated at \$3,500.

Within the past ten years the United States have used 170,000,000 bushels of barley in excess of what we have produced. The barley is mainly imported from Canada. The cost of the 79,317,800 bushels of barley imported into the United States in the past ten years is \$64,429,700, or a little over 80 cents per bushel of 48 pounds.

In subscribing for THE MILLING WORLD, Mr. J. C. Strickland, of New Marion, Ind., writes: "The wheat crop of Southern Indiana is rather above the average yield, in order to meet which I am engaged in putting into my mill some new machinery from Howes & Ewell, of Silver Creek, V. N."

The Nashville Mill Co., Nashville, Tenn., have placed their order with E. P. Allis & Co., for twelve pairs Allis rolls in Gray's noiseless belt frames and machinery necessary to double the capacity of their present (Allis) roller mill, which was only completed recently, but they find themselves unable to keep up with their orders with

their present capacity. The new mill will have a capacity of 300 to 350 bbls. daily.

Work has been commenced on the Central Mills, at Waterford, Pa. W. G. Royer has the contract for building the walls and laying the foundation. The engine has been taken to Erie where it will be put in as good shape as workmen can do it. The mill will be the same in size as the one burned, but it is not definite as to the height or shape as yet, as the contract for that part has not been let yet. All the late improvements will be added, and when done it will be a credit to the town.

The Indiana grain dealers at a recent meeting agreed that wheat weighing 60 pounds to the bushel, or by the grain tester, should be considered standard, and that when wheat falls below this standard, buyers be requested to make the following discount in prices, to make it equivalent, to wit:

Wheat weighing 59 lbs. . . 1c per bu. off.
Wheat weighing 58 lbs. . . 3c per bu. off.
Wheat weighing 57 lbs. . . 6c per bu. off.
Wheat weighing 56 lbs. . . 10c per bu. off.

And wheat falling below 56 pounds to be taken at the discretion of the buyer, and with damaged wheat, to use their best judgment, with the advice to buy at a low figure, with a view to discouraging careless farming. They also resolved that the loaning practice of grain-sacks to farmers, is pernicious to the interests of the grain trade, and should be abolished.

Col. Geo. A. Johnson's flouring mill, one and a half miles from Detroit, Minn., burned to the ground recently, and is, we understand, a total loss. The mill, engine and machinery as it stood, was valued at about \$30,000. There was some twelve or fifteen hundred bushels of wheat, a large amount of flour, bran, shorts and feed in the mill at the time amounting to about \$5,000, none of which was saved. A man was on watch in the mill at the time of its burning, and it is thought from what can be learned from the watchman, the fire started in what is called the dust room, in the upper story. The fire spread so rapidly to different parts of the mill that the watchman found it impossible to do anything towards extinguishing it. There was \$12,000 insurance on the mill, machinery and engine, and \$3,000 on the stock. The total loss outside of the insurance will be over \$15,000. Detroit will miss the mill very much.

Last fall the lines of propellers running between Duluth and Eastern ports on the lakes were unable to take all of the East-bound freight brought there by the railroads, four of which bring grain and flour—the Manitoba, St. Paul & Duluth, Northern Pacific and the Omaha lines—and the Duluth and Iron Range will bring iron ore. "Already this season," says a Duluth advice, "the boats have shown their inability to take the freight as fast as received, and it is accumulating in the warehouses and elevators, and long lines of cars now wait to be unloaded. Representatives of the various railroad lines have been here looking into the situation, in view of the greatly increased amount of wheat and flour expected here this season. It was agreed that more elevators and boats are imperatively demanded to handle the increasing business of the port, which, if not furnished by the existing elevator and propeller companies, must be provided by the railroad lines interested, and steps to that end will be immediately taken."

A GOOD ENDORSEMENT.

CAMPBELLFORD, ONT., June 27, 1884.
MR. M. W. CLARK, MANAGER TO GEO. T. SMITH MIDDINGS PURIFIER CO., STRATFORD, ONTARIO.

Dear Sir: Thinking you might be desirous to learn how we are getting along with our new process mill, I take the few moments I have to say the new process all rolls, full centrifugal reels you gave me, is a perfect success. I do not believe my mill has its equal in the Dominion.

The rolls, purifiers, dust collectors, and centrifugal reels, are all doing splendid work, the centrifugal especially. They are a great improvement over the old system of bolting, taking much less room, less power, and doing superior work. The dust collectors are a great economy, as all that is usually wasted is now returned to low grade, saving everything. It surprises me what a nice low grade your system makes out of a stock that is usually thrown to feed.

I have just returned from the East, where I compared my flour with the best made in Canada, and many leading American brands, and I am proud to say, found none that excelled, either in color or strength, either of my grades.

Shall always be glad to show any one desirous of seeing my work, what we are doing, and glad of an opportunity of recommending your machinery and system of milling.

Yours respectfully,

CHARLES SMITH.



PROVED BY TWO YEARS CONSTANT USE.

GRAY'S PATENT

4-BREAK-4

REDUCTION MACHINES,

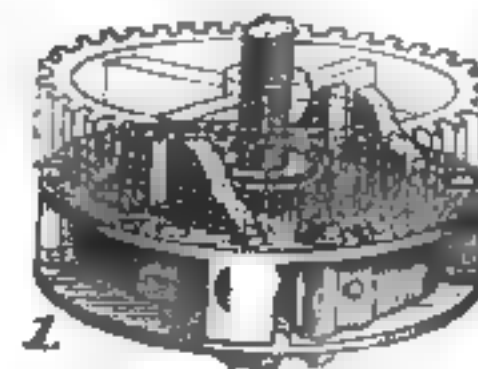
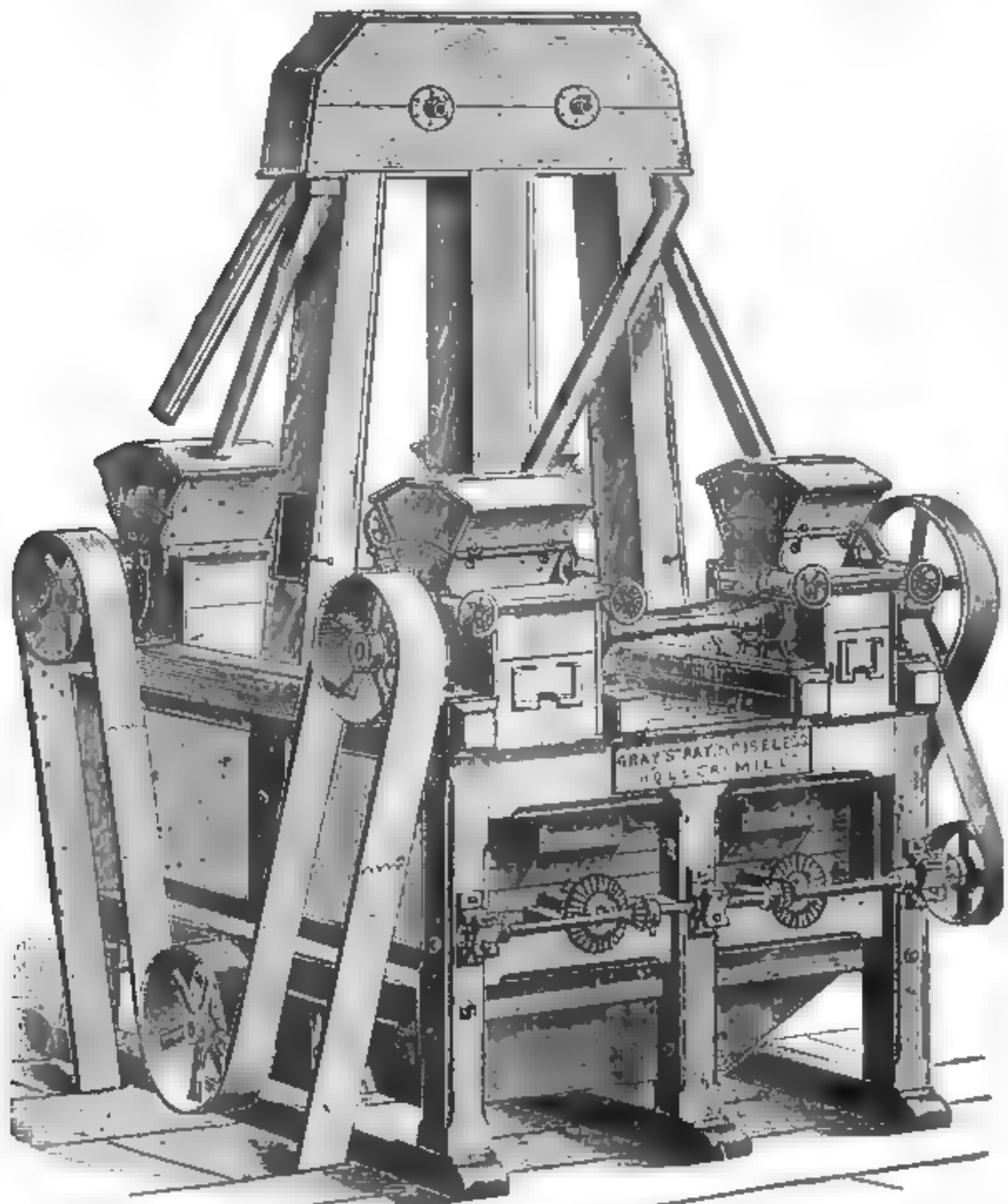
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*Economizes Room,
Takes Less Power,
Saves Millwright Labor.*

Send for Circulars and Prices to

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**RELIANCE WORKS,
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**EUREKA COIL SPRING**

Warranted to Prevent Back-
lash. Over 1,000 in use.
Equilibrium Driving Pul-
ley Prevents Side Pull
on Mill Spindle.

**JOHN A. HAFNER,
PITTSBURGH, PENN.**



A tool for Cutting, Leveling and Polishing the Fur-
rows and Face of Millstones.

Eight inches long, 2 1/2 inches wide, 1 1/2 inches thick.
Received the highest and only Award given to Polishers
at the Millers' Exhibition, Cincinnati, Ohio, June, 1880

For facing down high places on the buhr, this tool
has no equal, and can be done much better and in one-
sixth the time than with the mill pick. It is much
larger, cuts better, can be used on either face or furrow,
can be used until the corundum is entirely worn out
on one side and then turned on the other side. Has
over four times the amount of corundum and when the
corundum is worn out can be replaced in the handle at a
small cost. Sent by express, \$3.50. Satisfaction guar-
anteed, or money refunded. Address

HORACE DEAL, Bucyrus, Ohio

FOR ENGINES & BOILERS

*One to 30 Horse Power,
PRICE, FROM \$125 UPWARDS.*

Steam Pumps, - \$35 and up.

Eclipse Tire Benders, 15 " "

Fan Blowers, - - 18 " "

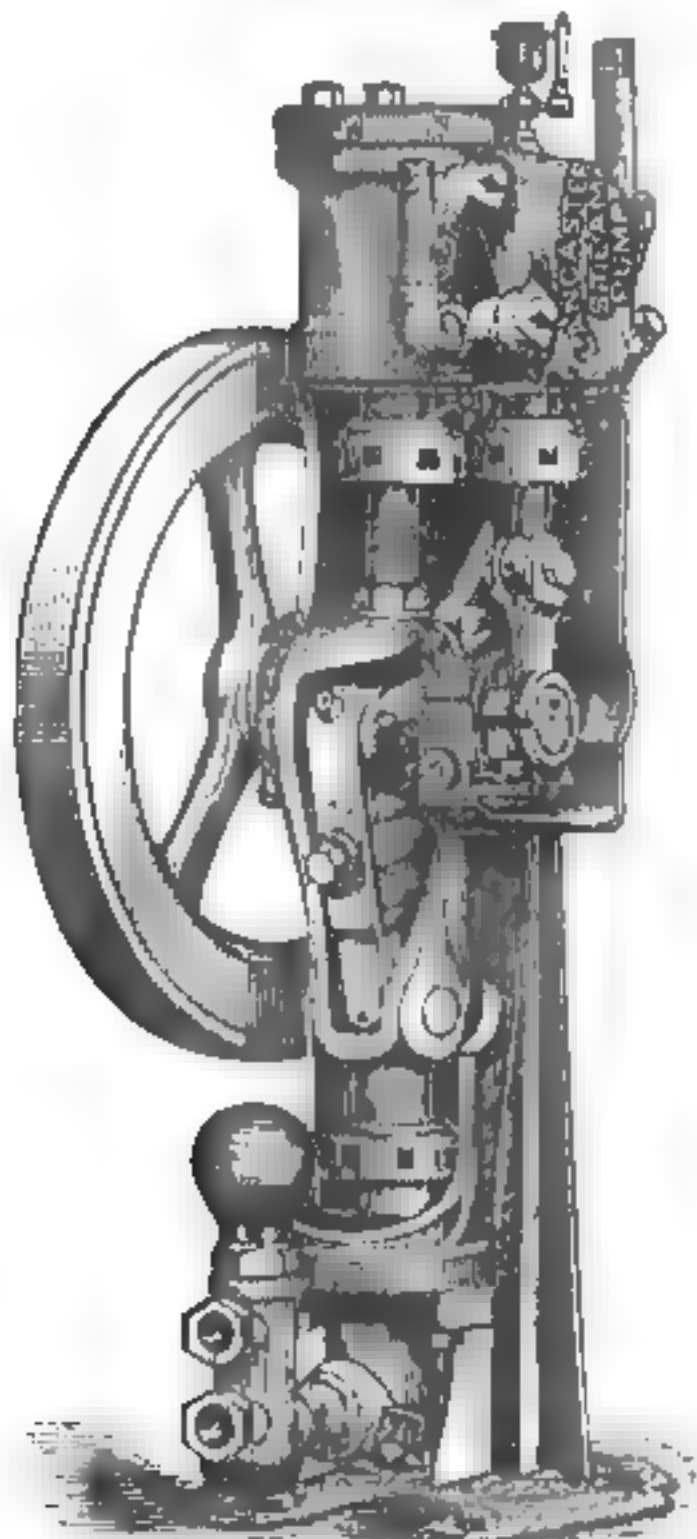
Tuyere Irons, - - - \$2.50.


THE BEST IN THE MARKET!

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THE LANCASTER STEAM PUMP CO.

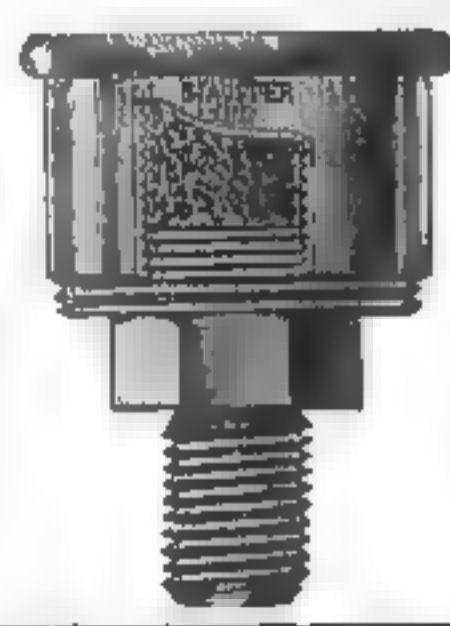
AND MACHINE WORKS,

EZRA F. LANDIS, PROPRIETOR, LANCASTER, PENN.



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111 LIBERTY ST., NEW YORK. P. O. BOX 2837.
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**Reisert, Stauffer and Barthel
LUBRICATORS & SOLIDIFIED OIL**

The most economical, perfect, practical, simplest, cheapest
and elegantly finished Lubricators ever put on the market.
One million sold within a couple of years. The Barthel So-
lidified Oil or Lubricating Compound is used with the
Lubricators exclusively. Whoever has once tried this Lu-
bricant will never again use oil or any other lubricating com-
pounds. Send for Illustrated Catalogue.



GREAT TRIUMPH IN INVENTION

The Simplicity so long sought after in Roller
Mills attained at last.

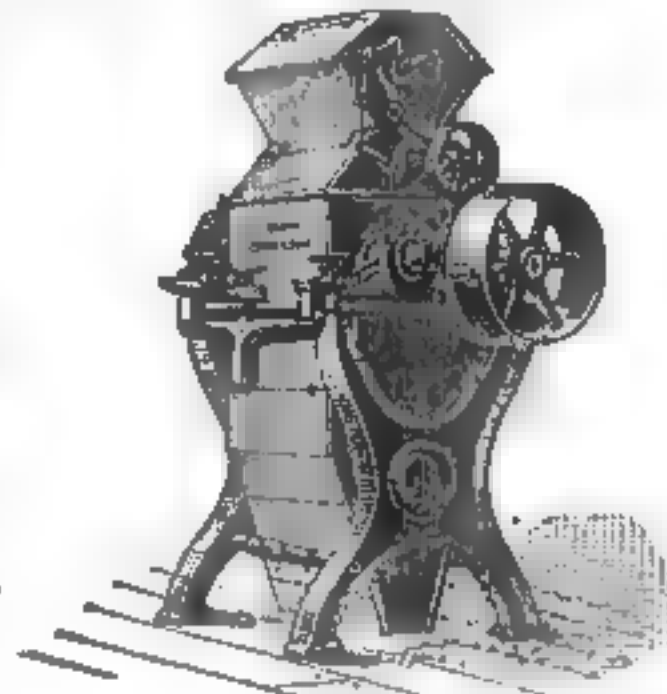
ONE, TWO, OR FOUR BREAKS IN A SINGLE FRAME

SIZES OF ROLLS 9x18 and 7x14 INCHES.

NO CROSS BELTS. NO FRICTION. NO LOSS OF POWER.

*Reduction Rolls, Bolting Cloth, Purifiers, Mid-
dlings Mills and Bolting Chests. General
Mill Furnishing Supplies.*

W. H. BARBER & CO., SOLE MANUFACTURERS, ALLENTOWN PA.

**BUCKWHEAT BUCKWHEAT**The Odell Buckwheat Roll.The Odell System for Buckwheat.Nothing Like It.

 Write Us For Particulars. 

Stilwell & Bierce Manufg. Co., Dayton, Ohio.



NOTES.

The home production of wheat is not always capable of supplying all the wants of the Hungarian mills.

The agitation against the proposed tax on imported cereals is increasing in Antwerp. It is alleged such a tax would ruin that port.

The Spanish and French Governments have agreed to authorize the building of two new railways which will involve the cutting of two tunnels through the Pyrenees.

Press despatches state that: The committee appointed to consider the advisability of widening the Suez canal or building a parallel one has decided in favor of the former plan.

A report has been received from the Northern Territory of South Australia to the effect that two experts now in Palmerston declare positively that they have discovered a coal seam 20 feet wide in that part of the colony.

It has been decided to hold an international exhibition in Bombay during the cold season of 1885-86, if possible, and a sub-committee has been appointed to prepare a report to the Government on the feasibility of the scheme.

The German exports of flour keep up to a moderate extent, although large imports of wheat continue to be made. The quantity of flour exported in the four months ended April 30, was 391,117 qntrs of 220 lbs, against 417,885 qntrs in the corresponding period last year.

The flour mills of W. and J. Bairstow, of Keighley, England, have been fitted with the electric light to prevent the possibility of fire. The installation consists of one Crompton-Burgin dynamo machine of the self-regulating type, and sixty-two 20 candle-power lamps which light the mill, boiler and engine houses, and offices.

The Antwerp Universal Exhibition for 1885 will be divided into five sections:—Public Instruction, Industry, Marine, Electricity, and Agriculture. The rent will be 70f. per square metre for ordinary stalls, and for separate stalls 150f. In the principal galleries 25 per cent. more will be charged. For the machinery show-rooms, we hear that the rents will be lower, and special agreements may be made.

Charles Rugel, a high authority among the many crop statisticians of France, says the French wheat acreage this year is larger than last, and that the weather and other conditions have thus far been favorable. The condition of rye is middling and the yield will be slightly under the average. Oats and barley had a good start, but the latter suffered some from drought. In conclusion he says: "We expect all crops to be better than last year."

The demand for agricultural implements in Tasmania has increased remarkably during the past ten years. Steam-engines, chaff-cutters, hoes, hay-rakes, and moving and reaping machines seem to have come into high favor. On the other hand, while subsoil-plows rank fairly high in the returns, the double-furrow plows are in much greater demand. The sale of hay-elevators is stationary, while in regard to threshing machines, few importations have recently been made. Reapers and binders, on the contrary, have come into high favor during the last few years.

The India canals are a distinctive feature of the country. They are splendidly built, being intended principally for irrigation, although having locks, so as to make navigation possible. The largest and most important one is the Ganges canal, which cost the government over £2,000,000. It is about 300 miles long, runs out of the Ganges and proceeds into the Ganges again. When the subject of building it was agitated, the interested natives vowed they would never for an instant tolerate it, tapping as it did the sacred river of the Hindus. Then when the work was actually begun they changed their tactics and gravely declared that water would not remain in or flow through the canal. When the fallacy of this position was shown, they recoiled from it and contented themselves with solemnly asserting that no native would ever avail himself of the improvement. It is now in full operation, however.

Herr Baer, lighting inspector of Dresden, contributes some notes on the above subject to the *Norddeutsche Brauer Zeitung*, which, in view of the recent explosion of malt dust at Bass' brewery, will, perhaps, be of some interest to our readers. The writer states that the leather mill bands are known to be a source of electricity, and from experiments he has lately conducted with the belts used for producing the power for the electric lighting of the Royal Theatre, Dresden, he is con-

vinced the electricity produced by these belts may now and then be the cause of the spontaneous firing of malt or flour dust, because in almost every case the electricity is absorbed in the various parts of the machinery. He recommends that care should be taken to see that no metal part is connected with the driving belt, if there are dangerous materials near, such as malt or flour dust.

Speaking about the financial distress of Mexico, reports from the capital state that many mercantile houses have failed there. The government has ordered all the treasury agents to refuse the Monte Piedad bank notes, and the situation daily grows worse. The institution, under its new management, refuses to lend over \$10 on any article which works much distress among the poor. The treasurer reports \$2,500,000 of nickels in its vaults, leaving over \$1,500,000 of these coins in the hands of the people, to whom they are valueless, not being in circulation or received as money. Beside this, the postoffice department appropriates the money it collects for subscriptions to newspapers, and gives in return the worst possible service. Over a quarter of the papers sent out never reach their destination, and the letter mail is handled with equal criminal carelessness. One whole week's mail from last month has never reached Matamoras, and probably never will.

Recent Russian advices are that a canal has been projected between the Ob and the Yenessa rivers, to connect Europe and western Siberia. The same authority states that the total length of railways in Russia January 1, 1881, was 14,210 miles, thus ranking Russia fourth in rank as to total number of miles built in the various European countries. The cost of building these lines is given at about \$87,000 per mile. A St. Petersburg correspondent of the *Frankfurter Zeitung* says general business in Russia is suffering severely, owing to the industrial and foreign political and financial depression. Russian export trade is stagnant. The stock market (dependent on that at Berlin) is very dull. The textile industries are said to be especially depressed, and the production has been seriously diminished. "Amongst the smaller manufacturers failures are of almost daily occurrence, and there is a scarcity of both money and credit." A crisis has also been developed in the sugar industry in Russia, as in other countries.

We hear, says the *Madras Times*, that the Board of Revenue, in submitting to the Government Mr. Robertson's report upon the annual plowing match held in January last at Teynampett, have expressed an opinion that, as these matches are now held, they are of little practical value in illustrating to the ryot how the agriculture of the country can be improved in the sense of increasing the productive powers of the soil. To effect this it is necessary to prove to the ryot that, by using improved plows, he can not only plow his land more quickly and invert the soil more thoroughly, but that he can get larger returns from it, with less relative outlay than by continuing to use the native plow. Mr. Robertson, who is supported by Mr. Wilson, has proposed that these plowing matches should in future be managed by a committee at Madras, and should also be held in various parts of the Mofussil; but in the board's opinion this proposal—an excellent one as far as it goes—does not go far enough. The great majority of ryots have never seen, or possibly heard of, the improved plows, and the board consequently advocate that they should be tried against the native implements on all kinds of soil, whether wet or dry, and in all districts, in a public manner, until it has been proved by actual practical demonstration that the out-turn of the crop is increased by their use. As a means to this end, the board are of opinion that what ought to be attempted is to carry on in a number of districts a series of "competitive farming matches," not merely plowing matches, lasting for a couple of hours, but carefully arranged agricultural contests (beginning with the plowing and ending with the reaping of the crops) carried out under such conditions of exact similarity in all respects, except as regards the plows used, as would leave no doubt on the minds of the ryots that any superiority of results in out-turn of crops was due solely to the use of the improved plows. The establishment of experimental farms in the different districts of the Presidency would greatly facilitate the farming competition which the board advocate, and they have consequently suggested to the Government that no time should be lost in commencing the establishment of these useful institutions. The board remark that the ryots are eminently practical men, and if the idea that the improved plow will give them a better return is once proved to them, there can be little doubt but that a greater demand for such plows will at once spring up on the part of all who have, or can get, the money to buy them.

Owners and Purchasers of Purifiers ATTENTION.

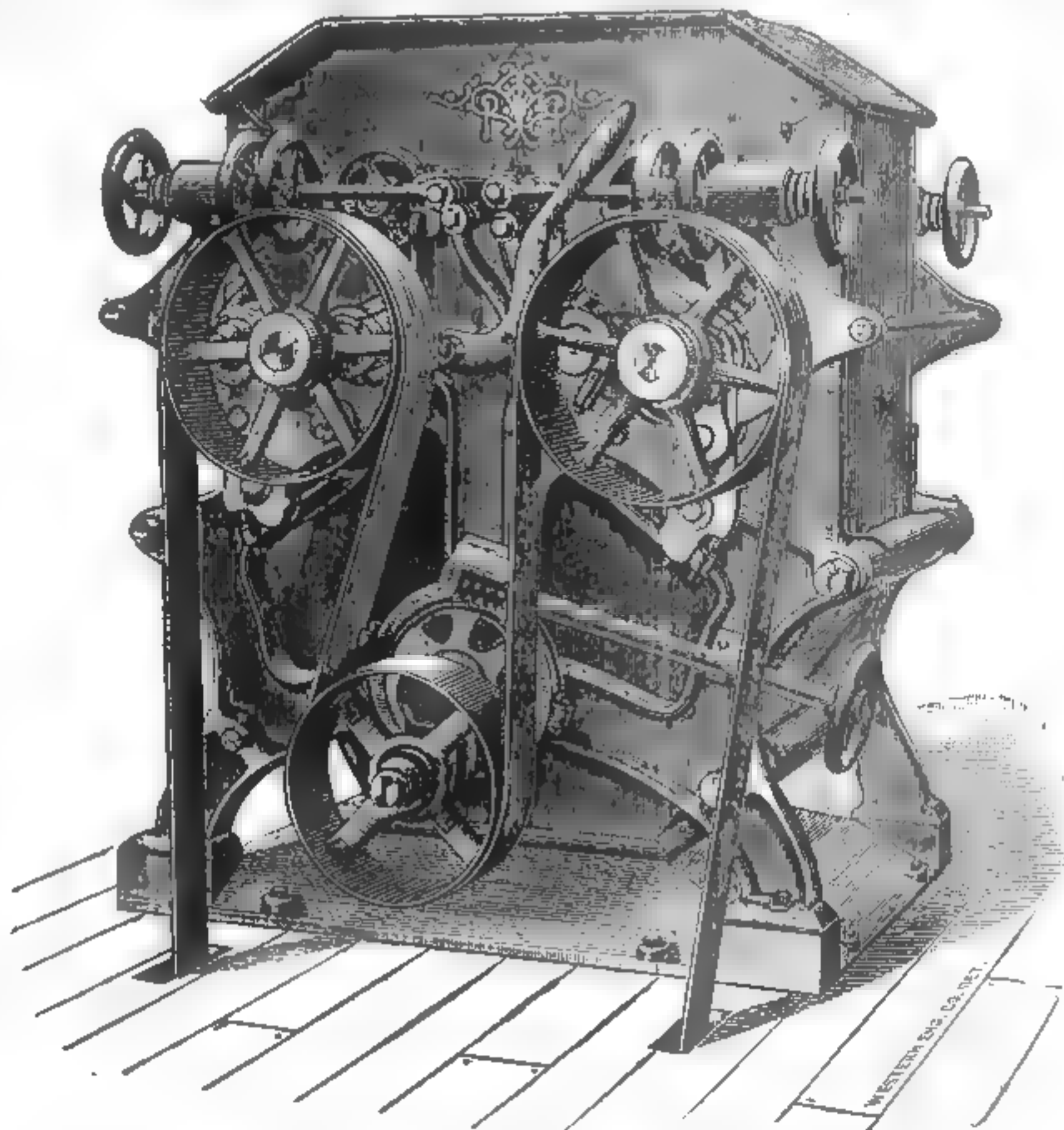
The suits of the Consolidated Middlings Purifier Company now pending in the U. S. Supreme and Circuit Courts have now reached such a stage as leaves no reasonable doubt of their early decision against the manufacturers and users of infringing Purifiers, and for this reason in justice and fairness to all concerned the Company hereby gives notice that its license covering the use of infringing machines should be secured before the termination of the above mentioned suits; otherwise such Purifiers will be liable to the full amount of damages and costs decreed by the Court.

Following the late decision of the Canadian Courts sustaining the Geo. T. Smith Purifier patents, millers there pleaded ignorance of litigation affecting the title to Purifiers in abatement of the damages assessed against them, but having given this public notice the Company will not consider itself bound to accept such a plea here.

Consolidated Middlings Purifier Co.,
July 1st, 1884. Jackson, Mich.

The MILLER ROLLER MILL

Has no superior. Universal Tightener, Automatic Feed, Tight Base, Noiseless, with Non-Cutting



Corrugations. We also manufacture the Rider Wheat Break, which has no equal for 1st, 2d and 3d Breaks. Send for Reference and Circulars of our Machines.

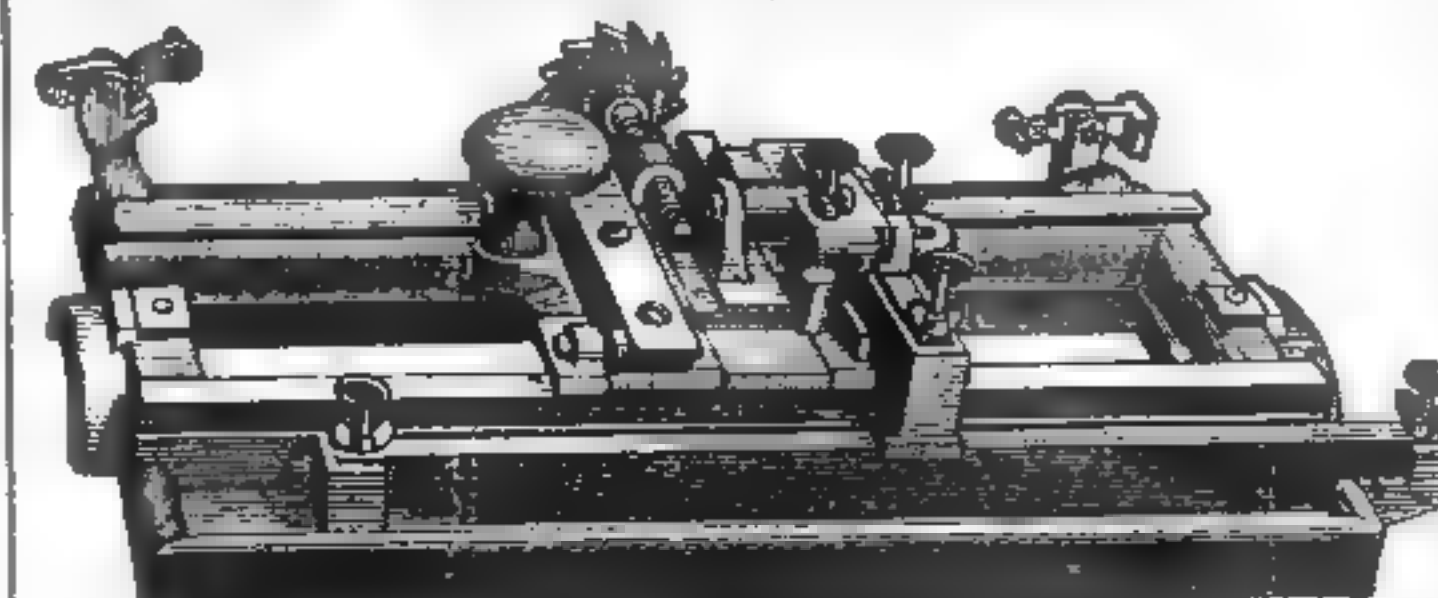
THE MILLER CO., CANTON, O.

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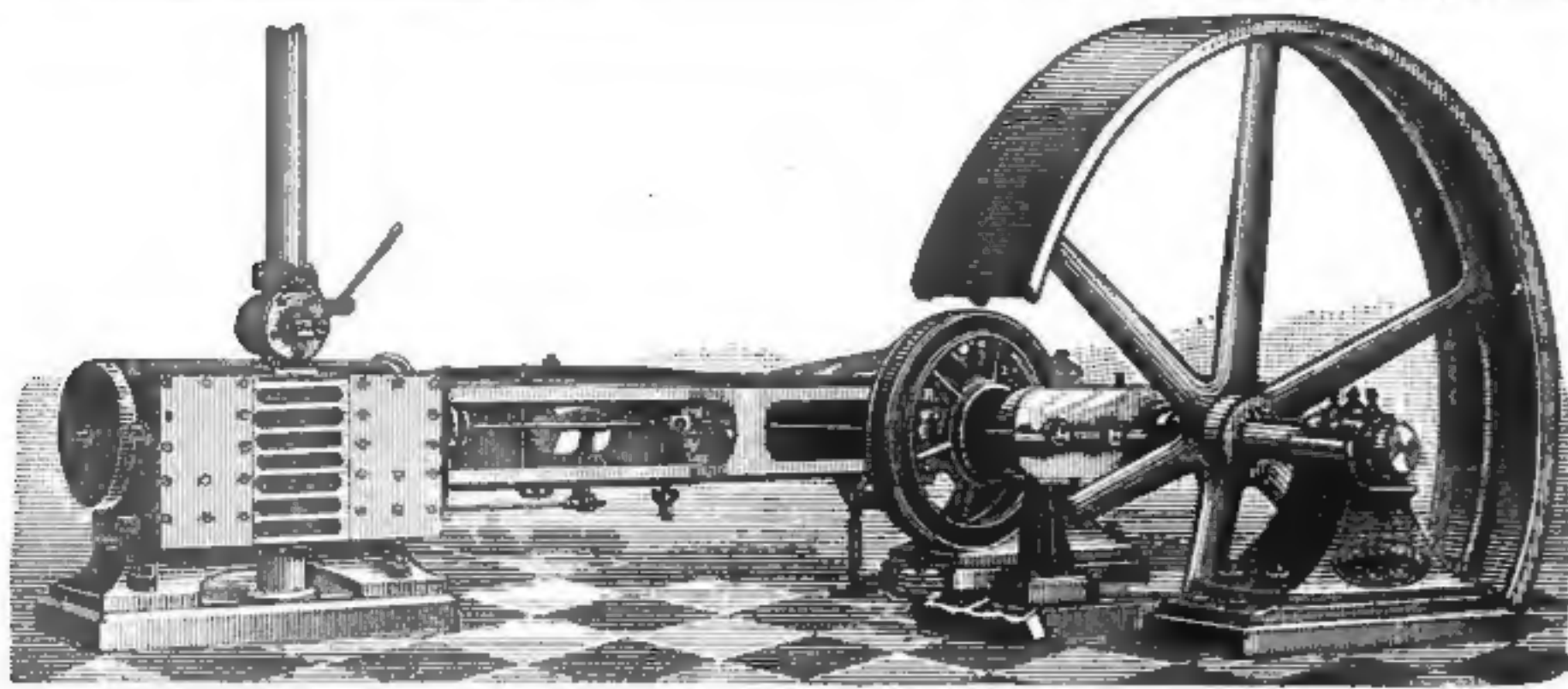
ADAPTED TO ALL KINDS OF DRESSING.

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| No. 1, to face and crack | \$25.00 |
| No. 2, to face, crack, dress furrows, and will dress any size stone | 45.00 |
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Will do as good work, and is more easily adjusted than any other machine. Sent on 30 days' trial. Address for circulars, containing full information.



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Ease of Operation, Effective Duty,
Close Regulation,
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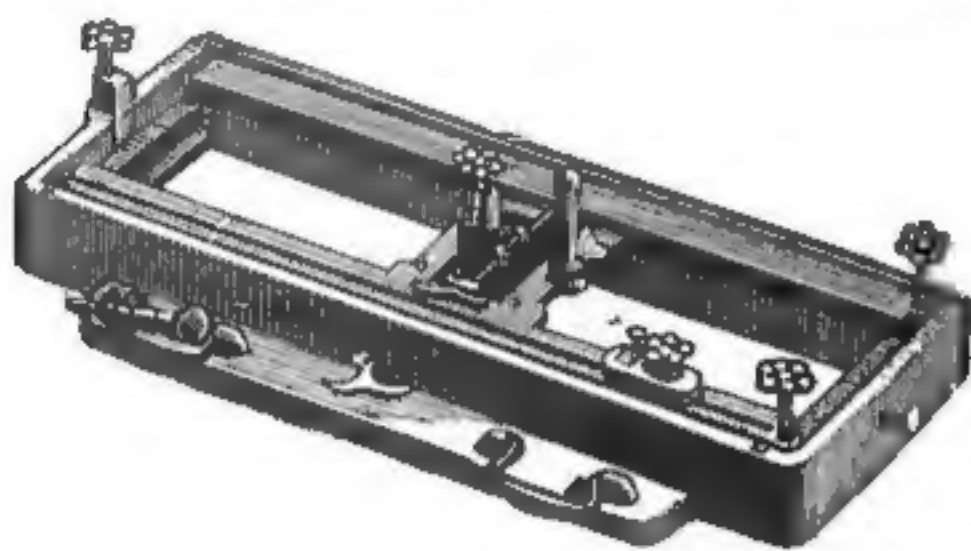
MILLERS CAN KEEP

their bolting uniform and run up to their full capacity during the hot weather by using
Fiske's Bolting Regulator.
Address, J. E. Fiske, Jamestown, N. Y.

PORTABLE FORGES Empire Portable Forge Co.
Cohoes, N. Y.
Send for Catalogue.

TEETON'S QUICK ADJUSTABLE

Diamond Millstone Dressers.



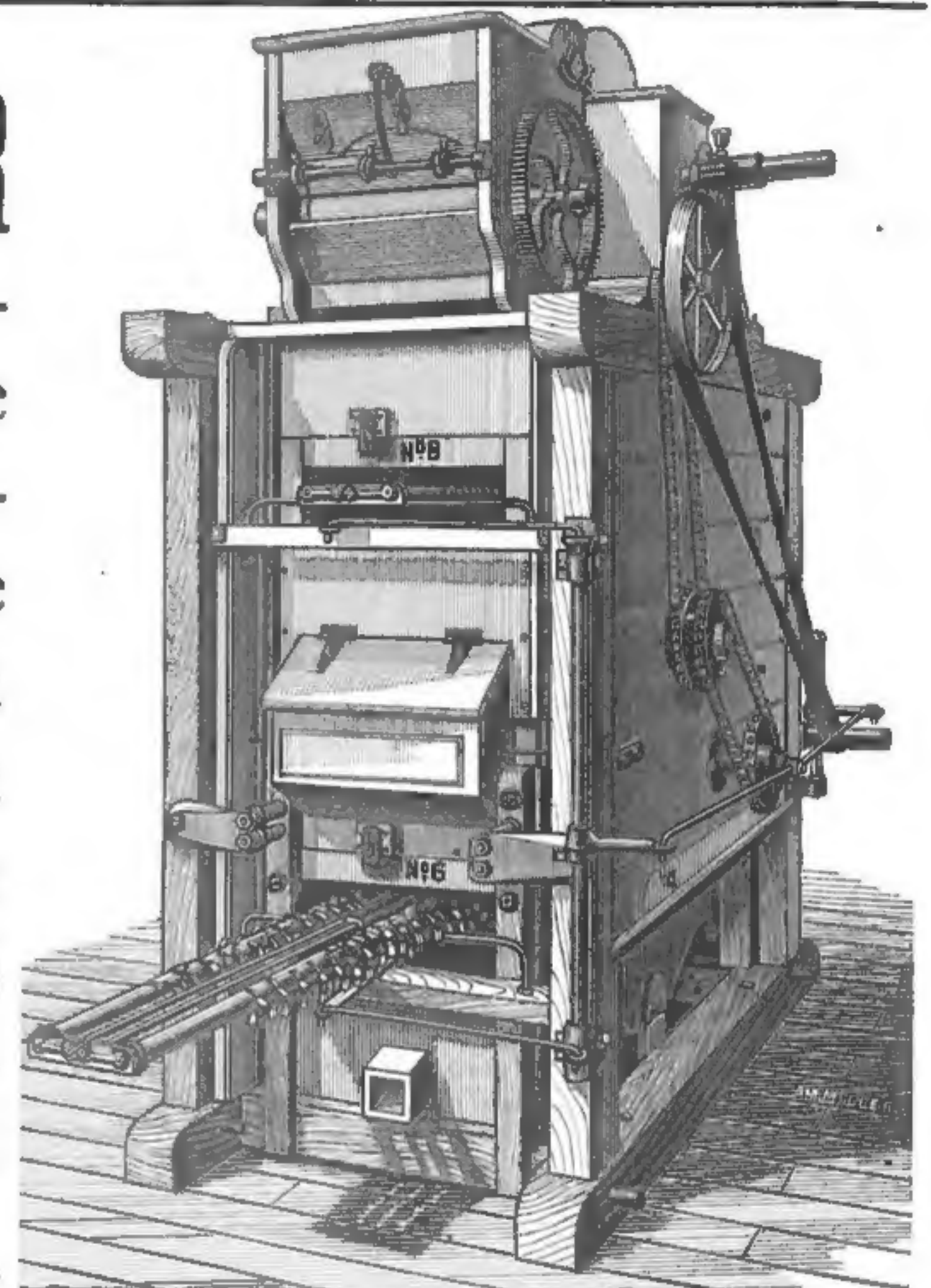
No screw feed. A new invention. Automatic rod feed. The only perfect, practical feed ever invented for a millstone dresser. A revolution. No ratchet wheel, springs, pauls and levers to contend with. Can cut over 1,000 cuts per inch right or left, reversed with the tip of one finger, while in motion. Feed can instantly be regulated to cut fine or coarse with one hand while the carriage is operated with the other, by the use of this rod feed can push the cross head right or left for quick operation. Self reversing when pushed to either side of carriage. A machine of special merits, is specially adapted for deep facing, as the feed can instantly be regulated to protect the diamond point, therefore need not raise the diamond on account of a slight raise. No extra attachment required to furrow. No change to be made on the cross head. All regulations or adjustments are made without the use of a tool to crack, face or furrow right or left hand burrs. Is warranted as represented, and is specially guaranteed to be more easily operated and quickly adjusted than any of its class, is convenient to set over spindles as machines are ample wide. Also a new improved patent diamond holder, the only perfect one. Other good improvements not mentioned. Sold on trial to responsible parties. Prices reasonable. Send for circular giving full description.
C. A. BERTSCH,
Sole Manufacturer, Cambridge City, Ind.

RIVAL STEAM PUMPS
THE CHEAPEST AND THE BEST FOR HOT & COLD WATER. \$35.00 UPWARDS. SEND FOR CATALOGUE.
15 SIZES MANUFACTURED BY JOHN H. MCGOWAN & CO. CINCINNATI

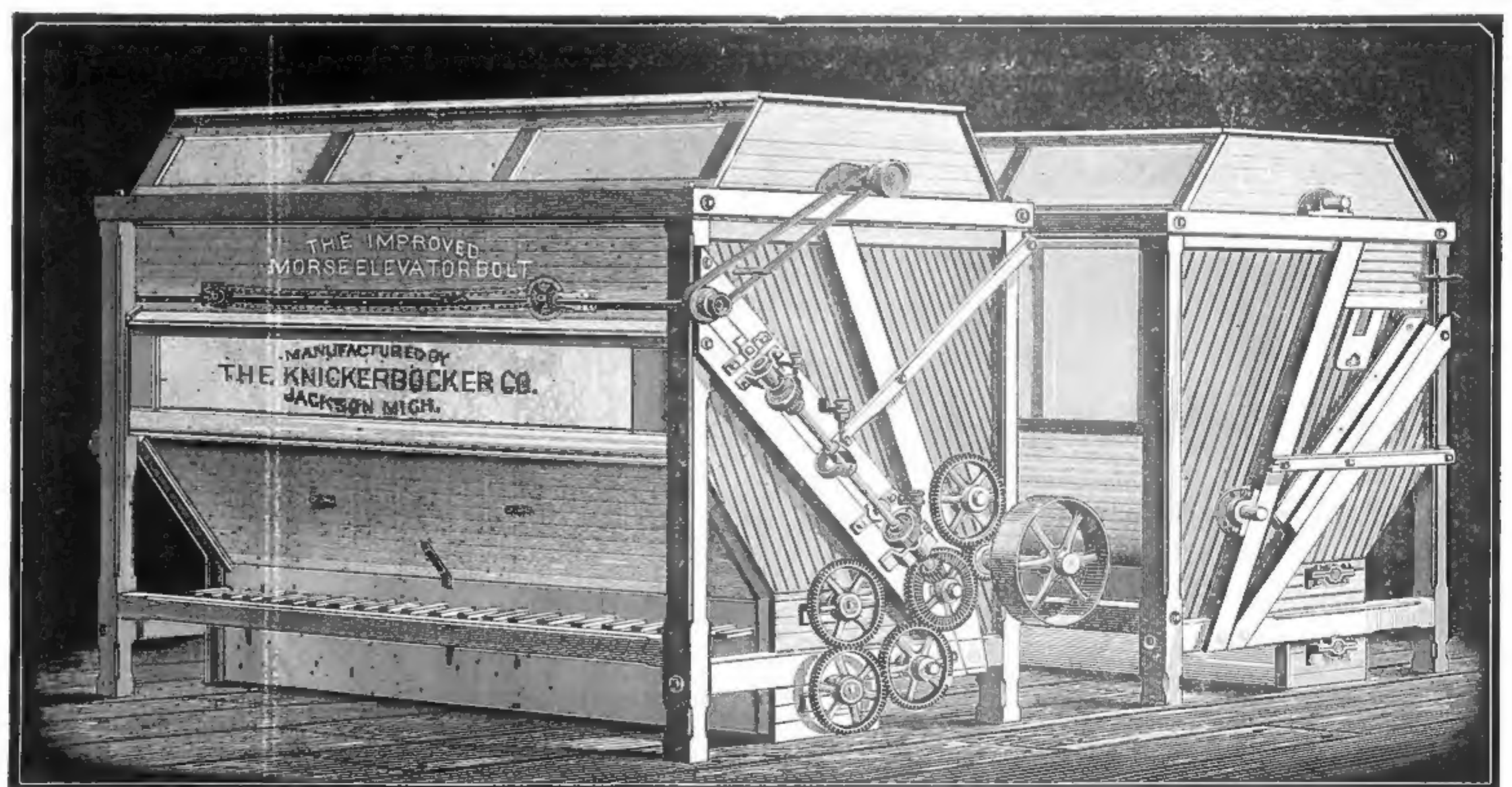
ANTI-FRICTION
Roller Detachable
CHAIN BELTING
FOR
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DRIVING PURPOSES.
A Superior Chain Belting
Manufactured and Sold by
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THE DOUBLE CURRENT PURIFIER

Has the Automatic Separating Feeder. It takes out the heavy specks between each number of cloth. It settles the heavy dust and lifts the light fuzz into the dust room. It has "Collins" Automatic Cloth Cleaner. Licensed under all conflicting patents. Descriptive circulars and prices on application. Mention this paper.



J. T. Walter, Sole Manufacturer, Easton, Pa.



The Improved Morse Elevator Bolt.

DEMONSTRATED IN OVER 100 MILLS TO BE THE BEST BOLTING DEVICE KNOWN.

THE KNICKERBOCKER CO., JACKSON, MICH.

HAS BEEN AWARDED
FIRST AND ONLY PREMIUM
AT THE
Millers' International Exhibition.



Office of THE MILLING WORLD.
Buffalo, N. Y., July 9, 1884.

Here is an idea advanced by our contemporary, the *New York Produce Exchange Reporter*, which it may be well to think over. It says: "The dealings in wheat the past week have been brisk, and at very low prices as compared with last year, when prices were about twenty cents per bushel higher, and we maintain the situation does not warrant this, and we hope to show dealers that the ground they occupy is an unsafe one and can not fail to result in violent changes and a falling off in exports as contrasted with other years of ample crops. More than half the farmers on this coast will not have any more than a fair yield to the acre, and the reports which they read in many papers of immense crops will not be believed by them, and those that hold no old wheat, will be slow to part with their new at low bids, so that we are not likely to have large receipts the coming autumn on the basis of 99 for September, 1.01 for October, and \$1.03 for November No. 2 Red, as the quality of wheat promises to be far better than last year, and the inspection we trust will be more rigid than last season."

Right on top of this comes the *Commercial Bulletin* of this morning saying there has been a further rattling decline in grain. The causes leading to the break are the same bearish influences so long at work that their enumeration is unnecessary. It is the same threadbare account of poor cable advices, but good crop advices; discouraged longs, but encouraged shorts; exhausted patience and exhausted margins; a strong statistical showing but a weak "general feeling." The visible supply of grain, according to the Chicago calculations, shows a decrease of 1,000,000 bushels wheat and 306,700 bushels corn. Just now a scarcity of ocean tonnage for grain is mentioned as an impediment to the outward movement of wheat, but the advancing rates are nearing a figure that will attract plenty of room. Business with exporters has been very light. A few loads of ungraded red winter at from 92¢ to 95¢ and a little hard Duluth at \$1.03 constitutes the business. New wheat is getting into Baltimore quite lively; choice new Southern selling there at \$1; about 45,000 bushels of new grain arrived there yesterday and receipts are likely to increase on new grain contributions from now forward. New wheat is expected on this market to-morrow from the West and South. For the last two days our market has been largely governed by the weakness at Chicago; in that market the late rains of the West are interpreted as favorable rather than otherwise. The speculative market for wheat has been fairly active to-day. The tone of the market at the close is somewhat mixed and probably not satisfactory to the bullishly inclined. As compared with yesterday's closing figures, to-day's opening prices show a decline of 3/4¢ on August, 3/4¢ on September and unchanged on October. At the lowest point the market showed a decline of 2 3/4¢ for August, 2 3/4¢ for September and 2 3/4¢ for October. The best sales of the day were at a decline of 3/4¢ for August, 1/2¢ for September and 1/2¢ for October. At the close of the market was weak in tone, with prices lower than yesterday's final figures by 1 3/4¢ on August, 1 3/4¢ on September and 1 3/4¢ on October.

An even \$5 is all the city mills pretend to ask for their flour. We have not heard of their selling for less, but they are courting business at that figure, while Western flour of equal quality and worth is offered at lower prices and cuts into

DUFOUR & CO.'S CELEBRATED BOLTING CLOTH.

the city millers business where the buyer does not care for the particular stencil enough to pay the premium for it. There is no new flour on the market as yet. An installment was expected from Southern Virginia this week, but the Southern millers are not so prompt in getting at work on the new grain as their early advices let us to expect. New flour is on the way from Southern Illinois in small quantities and will probably strike this market next week, but the early grindings of Southern Illinois flour will, in larger proportion, be diverted southward by the comparatively better prices current in that direction. The flour market here closes weak and some sales are reported at a decline of 5¢ to 10¢, but there is no general decline. Rye flour is quiet but firm. Corn goods are generally steady but quiet. Bag meal is weaker. Mill feed closes dull.

FOREIGN EXCHANGE.

The market for sterling quiet, but closed steady and without new feature, beyond the making of a moderate amount of security bills. The posted rates closed at 4.83 1/2 @ 4.84 for 60 days and 4.85 1/2 @ 4.86 for demand. The actual rates ranged: At 60 days' sight, 4.82 1/2 @ 4.83; demand, 4.84 1/2 @ 4.85; cables, 4.85 1/4 @ 4.85 1/2, and commercial, 4.81 @ 4.81 1/4. Continental exchange quiet and steady; francs, 5.21 3/4 @ 5.22 1/4 and 5.19 3/4 @ 5.18 3/4; reichmarks, 94 3/4 @ 94 3/8 and 94 3/4 @ 94 3/8; guilders, 39 3/8 @ 40 1/8.

The closing posted rates were:

| | 60 days. | 90 days. |
|--------------------------|----------|----------|
| London..... | 4 84 | 4 85 |
| Paris francs..... | 5 19 3/4 | 5 18 3/4 |
| Geneva..... | 5 18 3/4 | 5 18 3/4 |
| Berlin, reichmarks..... | 95 | 95 3/8 |
| Amsterdam, guilders..... | 40 1/8 | 40 1/8 |

BUFFALO MARKETS.

FLOUR—City ground clear Duluth spring \$5.00 @ 5.50; straight Duluth spring, \$5.50 @ 5.75; amber, \$5.50 @ 5.75; white winter, \$5.25 @ 5.50; new process, \$5.50 @ 5.75; Graham flour, \$5.00 @ 5.25. Western straight Minnesota bakers, \$5.50 @ 5.75; clear do, \$5.00 @ 5.50; white winter, \$5.50 @ 5.75; new process, \$5.50 @ 5.75; low grade flour, \$2.50 @ 4.00. CORNMEAL—Market steady, with a fair demand. Coarse, \$1.20; fine, \$1.30 per cwt. RYE FLOUR—In fair demand at \$3.75 @ 4.25. OATMEAL—Ingersoll, \$5.75; Bannerman's granulated, \$8.00; Schumacher's Akron, \$6.25 per bbl. BUCKWHEAT FLOUR—Demand fair at 3.50 per cwt. WHEAT—Sales late Monday afternoon, 6,800 bu. No. 2 red winter at 95¢, 2,000 bu. prime do. at 98¢, and a small lot of milling white at \$1.04. No. 1 hard would bring \$1.00 @ \$1.01 cash. At the Call Board \$1.00 bid cash; \$1.04 asked Aug.; \$1.03 asked Sept.; \$1.02 asked, \$1.00 bid Oct.; \$1.00 1/2 asked, 99¢ bid year. CORN—Dull. Sales two car-loads No. 2 at 57¢ in store, and nine do. No. 3 at 55¢ @ 55 1/2¢ on track; at the Call Board, 56¢ asked to arrive and July. OATS—Mixed Western 35¢, No. 2 white 37¢, State from wagons 44¢ @ 45¢. BARLEY—Season over; market nominal. RYE—No. 1 Western nominal at 71¢ @ 72¢.

BUFFALO WHEAT MARKET.

Buffalo, July 8th, 1884.

There has been no special change in our grain market the past week and prices have remained about the same as our last quotations. Very few orders have been received by our commission men and what were received were limited to very low prices and small quantities.

Samples of new wheat from Tennessee and Kentucky have been exhibited in 'Change which give every promise that our winter wheat crop this year will be very fine in quality and the yield large.

We quote No. 1 hard Duluth \$1.00 1/2, though there are choice lots here that are held at higher figures. There is some enquiry for No. 2 hard, but there is none on the market. No. 1 regular 94 1/2 @ 95¢. White wheat very little here and that is held by one firm, therefore it is practically out of the market, but there have been several lots shipped for this market which will be sold at its true value. No. 2 red is held at 98¢; sales of about 8,000 bus. in lots at 96 1/2 @ 97.

Corn is nominally unchanged though there is a decided tendency to favor buyers. No. 2 held at

58¢, No. 3 55¢ @ 56¢, sample 52¢ @ 54¢. Oats very little doing, No. 2 white on track offered at 37¢. Mixed western 34¢ @ 36¢. Other grain nominal.
JAMES S. MCGOWAN & SON.

RAIL AND LAKE GRAIN RATES.

The railroads this year have carried more than half of the whole East bound grain shipments and very much more than in the other years, says the *Railroad Gazette*. The river shipments seem not to have been affected by the low rail rates, for they were as large a proportion of the whole as last year, and they have never since the railroad war of 1881 risen to the proportions that they were just before it. The large proportion carried by the railroads in 1882 was due to the fact that the total shipments were then very small and were mostly required for interior consumption, and so could only be distributed by the railroads. The amount carried by them then was much less than in the other years.

The rail rate this year was 15 cents, against 25 cents in 1883 and 1882, and a nominal rate of 30 cents in 1881, which was so poorly maintained that it was probably equivalent to a rate of 25 cents.

We may assume, then, that, as the average total weekly shipments were nearly the same this year as last, the changes in the amounts going by lake and rail have been due to the difference of 10 cents per 100 pounds in the rail rate—that if the rate had been 25 cents this year the railroads would have carried but 1,710,000 bushels of grain instead of 2,505,000, and that the lake vessels would have

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carried 2,910,000 against 2,116,000. Now as the railroads received about \$203,000 a week for carrying the 2,505,000 bushels, and at 25 cents would have received about \$231,000 for carrying 1,710,000 bushels; and as it cost something more to carry the larger quantity, it is evident that they would have done better to have let the lake vessels get the grain which the low rail rate diverted from them.

In Mexico large fields of grain and other cereals are growing in abundance on land that but a short time since was uncultivated and running to waste.

JAMES S. MCGOWAN & SON,
SHIPPING AND COMMISSION MERCHANTS.

Choice Milling Wheats a Specialty
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PRICE PER CASE, \$5.00. SEND FOR CIRCULAR.

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THE BEST AND CHEAPEST COB CRUSHER IN THE WORLD.

Steel Being Used in its Construction.

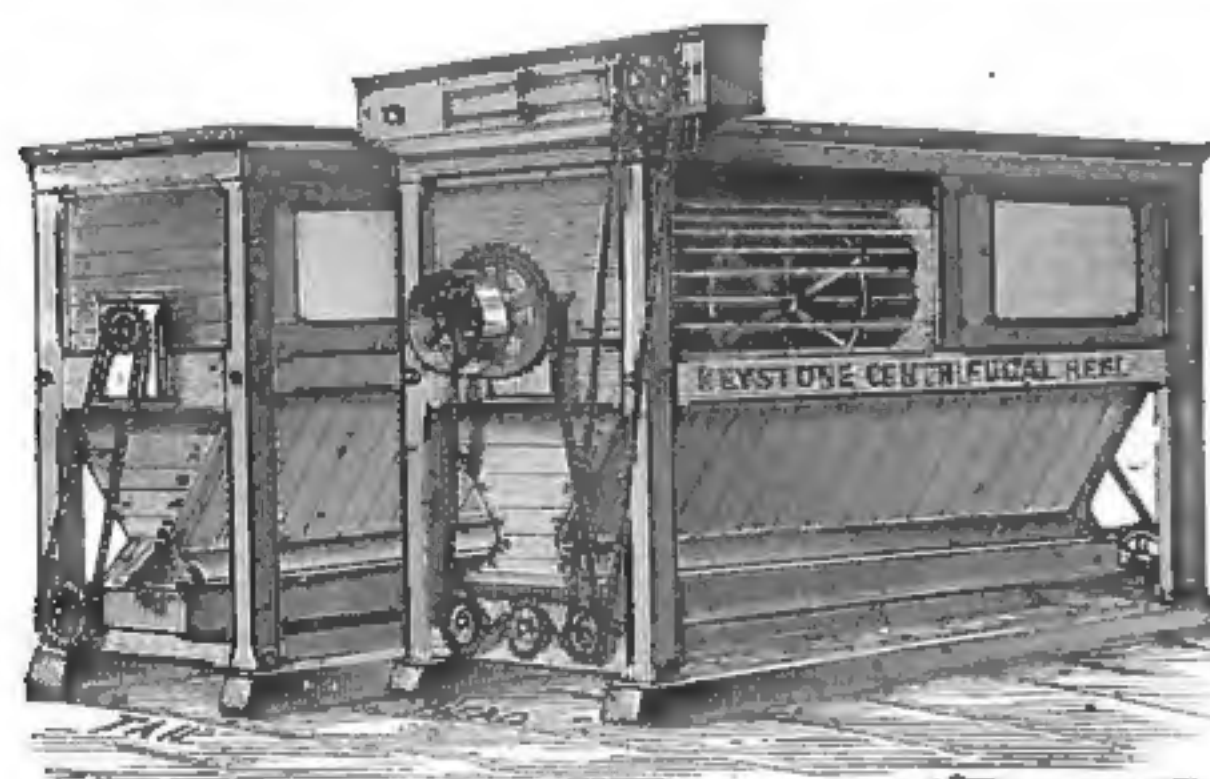
PRICE, 30.00.

CAPACITY 75 BUSH. PER HOUR.

Thousands of these Crushers are now in use, and giving entire satisfaction.

Please Send for Circulars.

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KEYSTONE CENTRIFUGAL REEL

—PATENTED MAY 6th, 1884.—

Drag Brush Feed, Tightest Heads, Best Results. Cheapest and Best on the Market. Adapted to all Kinds of Milling. The New Drag Feed Thoroughly Protects the Silk. Sent on Trial to any Responsible Miller.

ROLLER MILLS, SCALPING REELS, PULLEYS, SHAFTING AND ALL KINDS OF MILL IRONS.

Full Stock of Dufour and Dutch Anchor Bolting Cloth.

BEST QUALITY FRENCH BURR MILLSTONES, FOR MIDDINGS, WHEAT AND FEED.

Leather, Rubber and Cotton Belting, Smut Machines, Purifiers and everything belonging to a Flour Mill furnished at Lowest Market Prices. For Circulars, Prices and Full Particulars, address the Manufacturer,

C. K. BULLOCK, 1357, 1359, 1361 RIDGE AVE., PHILADELPHIA, PENN.

NORDYKE & MARMON CO., INDIANAPOLIS, IND.

Builders from the Raw Material of

ROLLER MILLS, CENTRIFUGAL REELS, FLOUR BOLTS.

WE ARE THE SOLE OWNERS FOR THE UNITED STATES OF ALL THE PATENTS UPON THIS ROLLER MILL.

This Is the Only Roller Mill Made Having All the Essentials Needed In Successful Milling.

500 BARREL MILL IN MISSOURI.

Read what an Old Miller who has Thirty-Four Pairs of these Rolls in Constant Use, Says:

MESSRS. NORDYKE & MARMON CO., INDIANAPOLIS, IND.
Gentlemen: In regard to the workings of our new mill erected by you, will say it is working fully up to and beyond our expectations. Our average work is fully 85 per cent. over your guarantee. Since starting our mill last July we have had no complaint of our flour from any market where sold. It gives universal satisfaction, and we have it scattered on the trade from Chicago to Galveston, Texas. Our yields are all that are attainable. We have tested it on both Spring and Winter wheats with satisfactory results on both varieties. Since the mill was turned over to us we have not changed a spout or a foot of cloth, nor have we found it required to make any changes. We have run as long as six days and nights without shutting steam off the engine, not having a "choke" or a belt to come off. The mill is entirely satisfactory to us, and for a fine job of workmanship, milling skill and perfection of system, we doubt if it is surpassed in the United States to-day. It is certainly a grand monument to the ability and skill of Col. C. A. Winn, your Milling Engineer and Designer. You may point to this mill with pride and say to competitors, "You may try to equal, but you will never beat it." Wishing you the success that honorable dealing deserves, I am,
 Yours, etc.,
 R. H. FAUCETT, PRES.

OFFICE OF DAVIS & FAUCETT MILLING CO.,
 ST. JOSEPH, MO., Nov. 28th, 1883.

500 BARREL MILL IN ILLINOIS.

MESSRS. NORDYKE & MARMON CO., INDIANAPOLIS, IND.
Gentlemen: We started up our mill in June last year, and it gives us pleasure to say that your Roller Mills are doing splendid work and give us no trouble. Your milling program required no changes, and concerning yields, we get all the flour from the offals, and we sell our best grades in the principal markets of the United States at the highest prices offered for any flour. All the machinery made by you is first-class, and we would not know where to purchase as good.
 Yours respectfully,
 DAVID SUPPGER & CO.

OFFICE OF DAVID SUPPGER & CO.,
 HIGHLAND, ILL., Jan. 10, 1884.

125 BARREL MILL IN INDIANA.

NORDYKE & MARMON CO., INDIANAPOLIS, IND.
Gentlemen: The 125 barrel All Roller mill you built us has been running all summer, and does its work perfectly. Before contracting with you for this machinery we visited many Roller Mills throughout the West and Northwest, built by the different leading mill-furnishers, and from all we could see, those built by you seemed to be giving the best satisfaction, and this is why we bought our machinery of you. Our mill comes fully up to your guarantees, and the capacity runs over your guarantees. The bran and offal is practically free from flour, and our patent and bakers' flour compares favorably with any we have seen elsewhere. I don't think anyone can beat us. Your Roller Machines are the best we have seen; they run cool, and the interior does not sweat, and cause doughing of the flour. Judging from our success, we would recommend other millers to place their orders with you.
 Yours truly,
 J. T. FORD.

LAFEL, MADISON COUNTY, IND., Jan. 10, 1884.

Letters on file in our office from a large number of small roller millers giving as favorable reports as above. A portion will be published as occasion demands.

SPECIAL MILLING DEPARTMENT!

Mill Builders & Contractors--Guarantee Results

Motive Power and Entire Equipment of a Modern Mill Furnished under one Contract.

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IMPROVED HUGHES DUSTER

HAS BEEN ADOPTED AND IS

In Use in the Largest and Most Prominent Mills

in the country. It has been adopted only after protracted tests, and because it has fully and completely met every representation we have ever made for it. J. A. Christian & Co., of Minneapolis, say:

"We find its Capacity is Greater and Work more Thorough than any other machine we have tried."

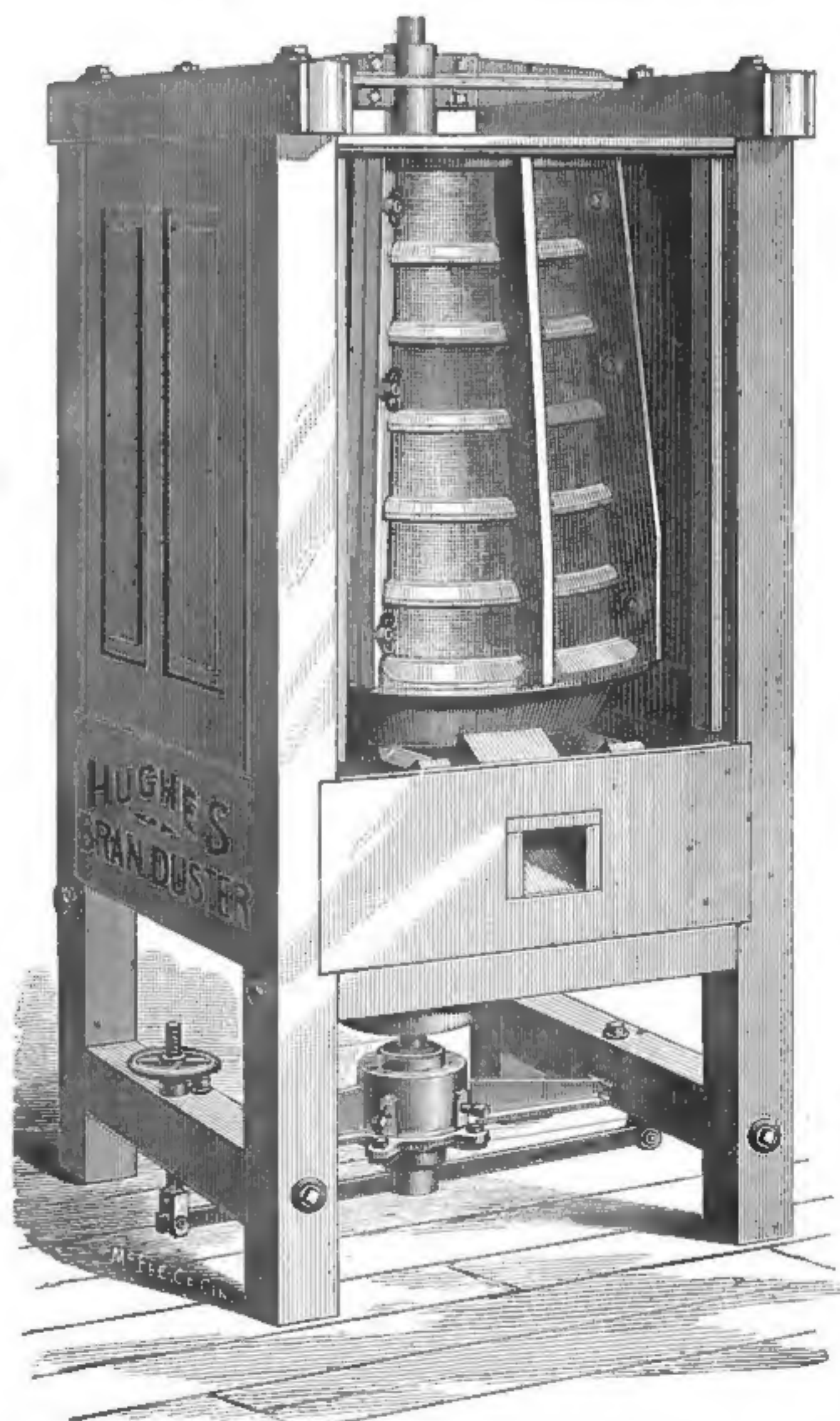
Starr & Co., the great millers of South Vallejo, Cal., are using five of our machines, and say:

"They are unquestionably the Best Bran Dusters in the market, both in dusting capacity and construction."

The **IMPROVED HUGHES DUSTERS** are used on SHORTS, CRUSHED TAILINGS, FINISHED MIDDINGS, etc., and the peculiar construction of our cylinder makes it the

ONLY MACHINE THAT CAN HANDLE HEAVY OFFAL SUCCESSFULLY.

By using them for dusting the offal between the last two reductions, the product of low grade flour has been lessened from three to five per cent. We fully guarantee every machine we build to be *just as we represent it, and to do just what we say it will.* In buying of us you assume no risk, as we ask no pay until the machine has *fully demonstrated its capabilities.* Write for further information concerning machines, prices, terms, etc., etc., to



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EVERY PIECE—FOOT—THREAD —YARD—INCH—MESH— WARRANTED

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One Green Thread Indicates Standard Quality.

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Two Red Threads Indicate Double Extra Quality.

All these qualities are made **BEFORE** the piece is woven and not by mechanical means afterwards.

Numberless attempts have been made to palm off inferior grades of cloth for **DUFOR**, but up to the present time all such efforts have signally failed. We have handled this silk since its first introduction into this country, and in purchasing of us millers can rely upon getting.

THE GENUINE DUFOR.

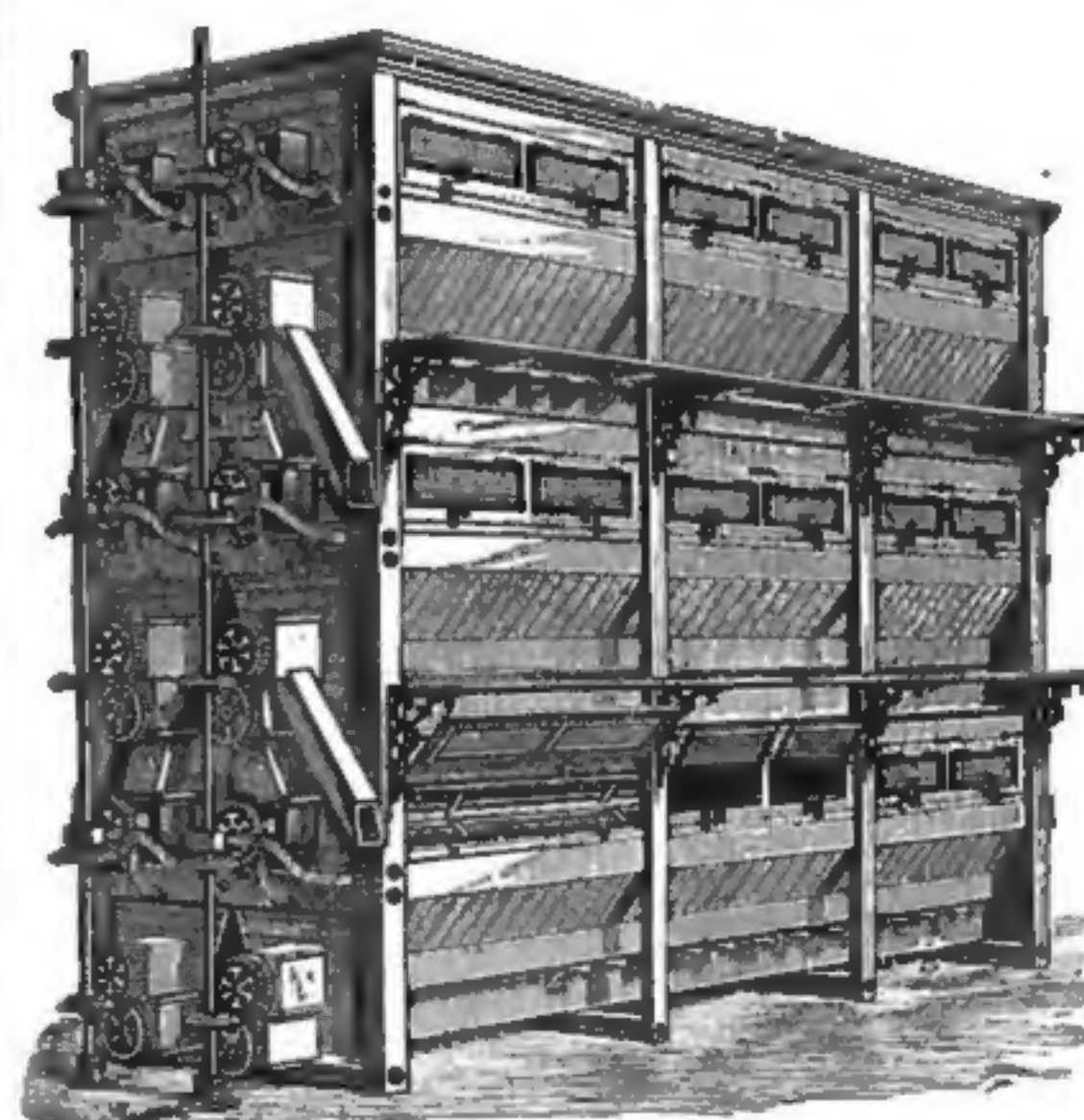
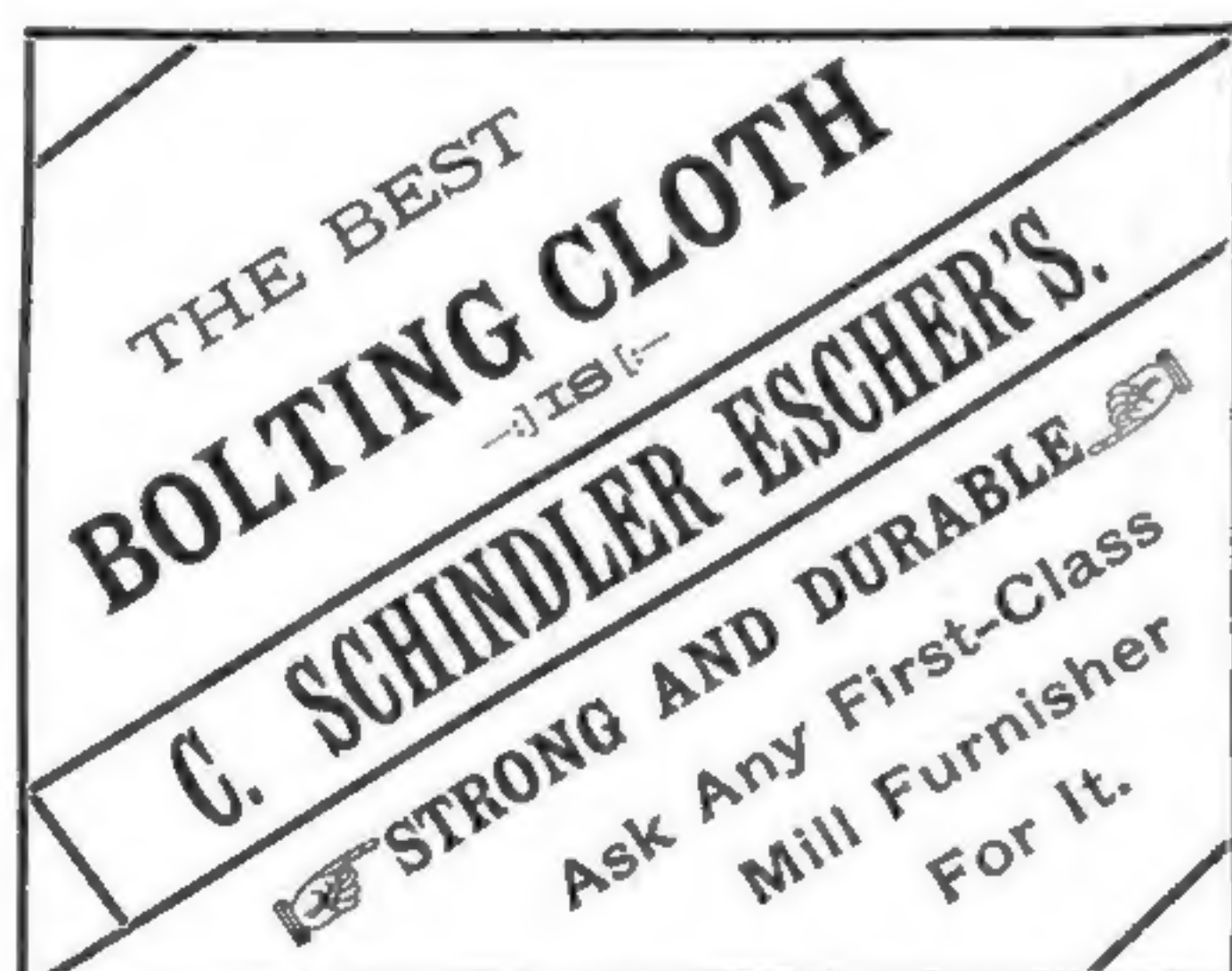
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